THE DWELLING.

THE NURSERY, THE PARLOR,

THE BEDROOM, THE LIBRARY,

THE DINING-ROOM, THE KITCHEN,

THE SICK-ROOM.

THE BAZAR BOOK

OF

HEALTH.

THE DWELLING,
THE NURSERY, *THE PARLOR,*
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THE SICK-ROOM.

"An ounce of Prevention is worth a pound of Cure."
Old Proverb.

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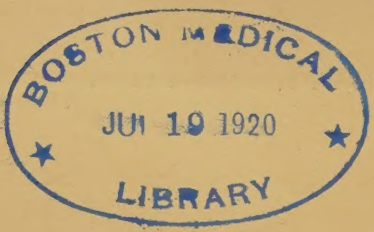

PREFACE.

ONE of the main results of the progress of the science of medicine in these later days, is the discovery that drugs are not so efficacious in the treatment of disease as former generations of doctors and patients have believed.

The physician has consequently turned into a new path of inquiry. Convinced of the little power possessed of curing disease, he has endeavored to trace out its causes, with the hope of being able to remove them. His efforts have been so far successful, that he has found that most of the maladies to which the human race is subject are produced by means within the control, more or less, of every man. He therefore does not hesitate to acknowledge that his art, which has so long and ineffectually striven to cure, should now mainly be directed toward preventing disease. He candidly admits, moreover, that in this new direction of effort the aid of all men is essential.

Medicine is thus withdrawn from the dark recesses of the college, and is no longer a mystery hidden from every one except the initiated, but an open subject exposed to and requiring free discussion.

This work, therefore, which has no other purpose than to indicate those causes of disease, and the means of preventing or removing them, which are within the control of every one, does not in any manner encroach upon the privileges of the medical profession, for the dignity of which the writer, who is a member of it, has naturally all proper respect.

That his book, though addressed to the general reader, will have the cordial sympathy of the enlightened physician, who must be conscious of the necessity of the concurrence of the public with every effort made to advance what may be called Preventive Medicine, is the firm conviction of

THE AUTHOR.

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THE

HEALTH OF THE HOUSE.

CHAPTER I.

The Dangers to be feared by the Occupant of a Dwelling, from within, not without.—Self-incurred and preventible.—More die from living in badly-built and ill-kept Houses than are killed in Battle.—A free Supply of pure Air necessary.—Quantity of Air required for breathing.—The Ventilation necessary for different Kinds of Buildings.—The penetrating Power of Air.—Passage of Air through Walls.—The Permeability of the various Building Materials.—The natural Ventilation influenced by Heat.—The worst constructed Houses tolerably well ventilated.—Warm Bedrooms better ventilated than cold.—Proper Means for the Ventilation of Public Buildings.—Ventilation in Summer.—The two Modes by which Air is rendered Impure.—Free Communication with external Atmosphere necessary.

A MAN's house is said to be his castle, in which he is supposed to be secure from every intruder. He, however, often shuts himself up in it with his worst enemies. In these modern days of comparative respect for law, or forced subjection to

its requirements, when men's hands are, for the most part, too busy in their own service to be raised against their neighbor, and the policeman is on the watch at every corner, there is little to be feared by the householder from external violence. The chief dangers which threaten the life of the occupant of every dwelling, be it castle or cottage, palace or tenant-house, are from within, and not from without. These internal dangers, moreover, are to a great extent self-incurred, and are as easy to prevent as the consequences of their presence are difficult to remedy. Many of the most fatal are inherent in the very construction of the dwelling elaborately piled up for the professed purpose of giving increased enjoyment and security to life. More people have died from immuring themselves in badly-built and ill-kept houses than have been killed in battle. Many a man, while rejoicing in the security of his barred windows and locked doors, has but excluded safety and embraced danger, thrust out health and life, and harbored disease and death.

A free supply of pure air is essential to the living being, and no dwelling can be a healthful abode which is not so constructed as to maintain a constant communication with the surrounding atmosphere. For breathing alone, man requires,

for each day of twenty-four hours, three hundred and sixty cubic feet, or nine thousand litres,* of air, which is three thousand times the volume of food and drink essential to sustain the daily life of a human being. The air he must breathe during a single year amounts to three million two hundred and eighty-five thousand litres. To secure for him this essential breath of life, the supply of pure air to every occupant of any dwelling whatsoever must be the freest and most abundant. To attain to the perfection of good air in any interior, the ventilation should furnish from the atmosphere without sixty cubic metres, every hour, to each occupant. The scientific men of France have embodied the results of their experiments in regard to ventilation in the following table, which has been accepted by the authorities as the official regulation for the construction of public buildings.

The ventilation for each person and every hour must give in—

	Cubic Metres of Air.
Hospitals with ordinary Sick	60 to 70
" " Wounded	100
" " Epidemical diseases	150
Prisons	50

* The weight of this air would be twenty-three pounds.

	Cubic Metres of Air.
Workshops, ordinary	60
" unhealthful occupation	100
Barracks, during day	30
" " night	40 to 50
Theatres	40 to 50
Halls for long meetings	60
" " short "	30
Schools for children	12 to 15
" " adults	25 to 30

Any less supply of pure air* than indicated by this statement is deemed insufficient, while, of course, any approximation to a higher standard consistent with other requirements may be regarded as desirable.

Men would seem to consider the air their most unwelcome visitor, so careful are they to exclude it from their houses. Fortunately, however, this intruder is so importunate that he will gain an entrance into the most vigilantly guarded dwell-

* The purity of the air of a dwelling occupied by human beings is gauged according to the proportion of carbonic acid gas it may contain. One volume of this gas to a thousand volumes of air constitutes a good interior atmosphere; any larger proportion of carbonic acid will deteriorate it. The ordinary exercise of one's senses will often be sufficient to test the purity of inclosed air, but chemical analysis is essential to accuracy.

ing in spite of bolts and bars, roofs and sheathings. Such, in fact, is the subtlety of his penetration that he makes his way through the very barriers especially raised to oppose him. No window need be lifted, no door opened, no crack or key-hole left unfilled to facilitate his passage. Coming through the walls, not only unresisted by the plaster and mortar, but even by the fire-baked bricks and the quarried stone, he presents himself, if not an invited visitor, an essential guest in every living company.

A plodding German professor* has proved by a series of careful experiments that air passes with more or less facility through the various walls of ordinary buildings. This result might have been inferred, from common observation, of the futility of the elaborate efforts made by most householders to smother themselves. The passage of this air, though in consequence of its small velocity it is not always perceptible to our senses, is nevertheless constant and very considerable. No one doubts that water can make its way through the most compact masonry; why, therefore, should there be any question about the permeating power of air, which is more movable, and seven hundred and seventy times lighter?

* Dr. Max V. Pettenkofer.

A water-tight vessel is, in fact, a comparatively easy thing to make, while to manufacture an air-tight one is a puzzling operation for the most skillful mechanic.

The common mortar used in building has been found, experimentally, to give ready passage to air, and most of the other materials employed in constructing walls are also permeable by it. Bricks, and many of the sandstones, are among the most remarkable of these. Even walls built of the compact limestones and other dense material allow the air, in consequence of the abundant mortar necessary to their construction, to pass through them with facility. From the irregularity of the quarried and harder stones, it is found necessary, in building, to use a much larger proportion of mortar in order to fill up interstices, than is required by the exact cubes of brick and the softer stones, which may be easily cut and fitted with precision. It has been computed that while the wall of brick requires only one fifth or sixth, and that of sandstone a sixth or eighth, the quarried limestone one must have no less than one-fourth of its whole volume composed of mortar. Thus, though the last is built of a denser stone, it may be no less permeable by the air than the former, since a so much larger proportion of

the porous mortar has been used in its construction.

The natural ventilation, as it may be called, through the walls is especially influenced by the difference of temperature within and without the house. A single degree only of greater heat in the interior will draw in one hour, through a square metre of sandstone wall, 0.169 cubic metres of air; of a quarried limestone, 0.232 cubic metres; of a burned brick, 0.283 cubic metres; of a calcareous tuft, 0.364 cubic metres; and of an unbaked brick, 0.512 cubic metres. The ventilation through the walls, of course, augments with the increased difference of temperature between the air inside and outside.

So great, in fact, is the effect of difference of temperature upon the natural ventilation, that a house well heated in winter may be better ventilated with every thing closed but the usual unavoidable cracks, than the same house in the summer, with all the doors and windows thrown wide open, but no difference of temperature between the air within and without.

Nature has mercifully made it almost impossible for people, with all their apparent determination to do so, to smother themselves in their houses. Whatever may be the incompleteness of

plan or imperfection of structure, the ordinary dwelling of man is tolerably well adapted for supplying him with one great essential of life, an abundance of air. There can be no doubt that, even without any special contrivance for ventilation, the worst-constructed house has in its doors, windows, walls, fire-places, and inevitable holes and cracks, a sufficient means for supplying its inhabitants with the required quantity of pure air. Many of these will perform their functions of themselves, but others require the attention of the householder. In winter, a house, to be well ventilated, must be well warmed, and it is better to have a too hot interior with open windows than a too cold interior with closed windows. A shut-up apartment, the temperature of which in winter is about the same as that of the external air, is neither fit to pass the day or night in. Its air once corrupted by the breathing of its occupant or occupants and remaining stationary, as there is not heat enough to produce motion and an interchange of current between the interior and exterior atmospheres, acts as a constant poison of the most dangerous kind, as long as it is inhaled. There is a prevalent notion that the bedroom, to be healthful, must be cold, and many a poor fellow resigns himself in consequence to a

preliminary chill and chattering of teeth every winter's night before he slumbers. If the occupant of the bed-chamber has a taste for a nocturnal ague, he can only indulge in it with security by leaving the window open, if he is determined upon extinguishing the fire. A person with sense or resolution enough to raise a window can at any time thoroughly ventilate his house, provided in winter it be well warmed.

In public buildings, hospitals, legislative halls, court-houses, school and ball rooms, and all interiors, in fact, where numerous persons occasionally congregate, there should be an especial provision for ventilation. A simple and effective apparatus for this purpose consists of a channel near the ceiling, made to pass through the wall as here indicated. The inside opening may have a lid controlled by a cord and pulley by which the admission of air can be regulated. The ventilating apparatus should be graduated in size and number, according to the requirements of the building. Ventilation by double windows is strongly recommended for large hospitals. By

this plan a free supply of air is obtained from without, by its passage through a large opening in the upper division of the outer window and a metal rose in a pane of the inner one. Draught is in this way avoided, and, moreover, the chill of the fresh air is diminished by passing through the space between the two windows and the metal rose of the inner one, the temperature of which will correspond nearly with that of the interior of the apartment. In summer no better ventilation is required than can be furnished by freely opening the doors and windows. The registers of furnaces and stoves should not be kept closed, and fire-places and chimneys after a thorough cleansing must be left free to give circulation to the air, without any obstruction from bags of shavings, fancy paper aprons, fire-boards, and metal fixtures. Fan-lights are good ventilators in summer. Iron gates of open structure, or even Venetian blinds, where security from intrusion will permit, are not only, if tastefully made, ornamental, but may be advantageously used, in order to admit air, as occasional substitutes for the solid and impermeable front doors, on the outside of which they may be conveniently placed.

There are two modes by which the air of a dwelling is ordinarily rendered impure, and of

course dangerous to breathe. The one *quantitatively*—that is, by changing the proportion of its proper constituents; and the other *qualitatively*, which is by mixing and contaminating it with impurities foreign to its composition. The first is the inevitable result of the exercise of our ordinary functions, and is inseparable from life. By breathing we constantly consume oxygen and give out carbonic acid, and thus necessarily alter the proportions of these gases essential to the purity of the atmosphere. The action of the skin and other organs has a similar effect. There are various operations of a household, moreover, which are indispensable to the comfort of living, such as burning lights, fires, cooking, etc., by which the proportion of carbonic acid and other constituents is sensibly increased and the purity of the air necessarily diminished. A free communication with the external atmosphere by means of ventilation, whatever may be its kind, is the only effective means for the counteraction of this natural and unavoidable deterioration of the breath of life.

CHAPTER II.

Qualitative Contamination of the Air.—Impurities, fault of the Householder.—Impurities, fault of the Community.—The most common causes of Diseases.—Indifference to protect Life compared with the love for it.—Simple Rule in regard to offensive and deleterious Products.—Mechanical Contrivances for their Removal.—The necessity of Drains.—How best constructed.—Soil Pipes.—Sinks.—Structure and Arrangement of the Water-closet.—Municipal Neglect.—The necessity of Public Action.—Houses in the Country.—Strange neglect of the Requirements for Health.—Effect of Cess-pools and Drains upon the Health of Rustic Populations.—Water an essential for the Removal of all House Impurities.—Foul Water a Cause of Disease.—Cholera.—Typhus.—Construction of Cisterns.—Filtering of Water.

The qualitative contamination of the air, as it is scientifically termed, is that vitiation of the atmosphere of our houses which comes from the mixture with it of impurities foreign to its natural composition. Some of these are the products of vital functions and almost indispensable household operations. Though their generation to a certain extent is inevitable, it is by no means necessary that they should mix with and contaminate

the air of the dwelling. If they are allowed to do so, it is ordinarily our fault, and may be generally attributed to defects of construction of the house, bad economy in its management, or to the uncleanly habits of its occupants. Many, however, of the impurities which so commonly vitiate the air we daily breathe have a source beyond the control of each individual householder. They are nevertheless in almost every instance spontaneously produced, and accordingly within the power, if not of the single proprietor or occupant of the dwelling, of the community at large. These may be only incidentally mentioned in the course of this book, the purpose of which is to guide the conduct of the private citizen at home, and not to give lessons of duty to the public. The two subjects, however, have a mutual relation which it is impossible entirely to sever, and the individual and the community, the single dwelling and the town, must be regarded, to a certain extent, together, even when treating especially of the "Health of the House."

It is a curious anomaly, in the general desire for health and love of life, that while the contamination of the air by foreign impurities can be prevented with perfect ease, it remains the most common cause of disease and death. It is calcu-

lated, and apparently from well-established facts, that at least four-fifths of all the maladies which inflict the human race, and these of the most fatal kind, are owing directly to the breathing of an air made virulent by poisons which are allowed voluntarily to mix with it. The deadly plagues and pestilences, infectious and contagious diseases, cholera, typhus, and typhoid fevers, smallpox, scarlatina, even consumption, and many of the less fatal but more constantly prevailing ailments—as rheumatism, Bright's disease of the kidney, coughs, and catarrhs—have often no other cause than an atmosphere vitiated by the uncleanliness or neglect of man.

The means for the removal of many of these impurities, and the consequent prevention of the fatal corruption of the air, are within the power of every builder or occupant of a house. The simple rule in regard to all offensive and deleterious products necessarily generated in the abode of man, is to get rid of them in the promptest and most effectual manner. There are certain mechanical contrivances for this purpose, and these are essential to the comfort and healthfulness of every inhabited structure. No house should be without its drain, and this, to be effective, should be of a diameter of at least six inch-

es, even for the smallest dwelling. The best material is glazed stone-ware, and the joints should be connected by an impervious clay. The course of the drain should be as direct as possible, without angles, and with the greatest fall that can be obtained. If it necessarily passes under the house, although it is better otherwise, it should be imbedded in a cement of at least six inches in thickness. The drain should be always trapped and ventilated. All the waste-pipes, through which are discharged the contents of baths and sinks, should be sufficiently large to allow of a free flow. The soil-pipes of the water-closets and urinals are ordinarily of too small a calibre. A competent authority* declares that they should never be less than four inches in diameter. They must be composed of very strong cast-iron, with water-tight joints, and protected from rusting by several coats of paint both inside and out. When practicable, the course of these pipes should be on the outside, and not, as is commonly the case, through the interior of the house. Porous stone is a bad material for sinks; the best is either wood lined with lead, glazed stone-ware, or slate. A good-sized window, communicating directly

* See "How to make a House Healthy and Comfortable," by Henry J. Lanchester.

with the outer air, is an indispensable requisite for every water-closet, which, moreover, ought to have two doors, inclosing a lobby between, and made always to open inward, to prevent the passage of bad air into the interior of the house. It is almost superfluous, since a royal personage was brought so near to death by being thus poisoned, to warn ordinary people against the danger of having a direct communication between a sleeping or other inhabited room and the water-closet. If, according to Sydney Smith, a railway accident to a bishop is the best security for the future protection of the public, *a fortiori*, the sickness of a prince ought to be a safeguard for the general health.

In large towns the inhabitants are necessarily much at the mercy of the municipal rulers who, blinded by ignorance, or distracted by a corrupt self-interest, are heedless of the requirements of public health. Accordingly, the supply of the various contrivances essential to the purification of the town, and consequently of every house in it, is either wanting or inadequate. Without a proper street sewage and an abundance of water for general use, it is impracticable for any ingenuity to devise means of making a private house perfectly pure and wholesome. As long as in-

competency and dishonesty brood over our cities, we know of no way of dispelling the shadow of disease and death they spread than by resignation to the fatality that menaces us. Something may be done, perhaps, by each householder toward mitigating the danger, but nothing effectual for its removal without the aid of public authority. The poisonous air generated by the foulness of a neglected town can, it is true, be diluted to a certain extent, and its deleteriousness in consequence somewhat lessened, by due attention to the ventilation of private houses; but this is an uncertain reliance, and makes a man's health and life dependent more or less upon his own varying sensations or the caprices of others.

In the country the purification of the dwelling is more completely under the control of the builder and occupant. At the same time, strange to say, there is less regard generally to this essential of comfortable and healthy existence there than in the town. The country resident is too apt to presume upon the abundance of pure air within easy reach, where it blows freshly over the surface of the field and across the hill-top, to trouble himself much about the state of the atmosphere in and about his immediate dwelling. We find, therefore, his cow-yard within sight, and

easy smelling distance of the parlor, and the dung-heap rising nearly to the level of the bedroom window.

All country dwellings should be provided with the same drains, sinks, and conduits that are found in well-arranged town houses. As there are no street sewers to carry away the foul products of the household, these should be conveyed by means of proper pipes to cess-pools placed at as great a distance as practicable from the dwelling, and far away from the well or any source of supply of water necessary for use. The earth-closet might be used, and the cess-pool, which in every district, however little populous, is more or less a nuisance and a danger, dispensed with.

We need hardly say that the process of manufacturing the ordinary fertilizers of the soil does not require to be inspected constantly by the eye and tested by the nose of every occupant of parlor and bedroom. The horses, cows, pigs, fowls, and all other animals whose natural products, however useful, are neither ornamental to the sight, nor, in fact, in any way agreeable to the senses or healthful, had better be allowed to create them at a safe remove from the human dwelling-place. Such is the important bearing upon the health and life of the occupant of a dwelling,

of its greater or less purification by the proper means, that an English poor-law medical officer solemnly declared that he had reduced his duties one-half—that is, had diminished in that proportion the prevailing ill health among those poor people in the country under his charge, by looking carefully to the cess-pools and drains, and having them properly constructed and placed.

The various mechanical contrivances for the removal of impurities from our dwellings are more or less dependent upon a supply of water. This should be so abundant that no fear of waste may prevent the frequent flushing, as it is called, of all conduits, soil-pipes, and drains. By this means they will be thoroughly cleansed, and the poisonous gases generated driven out through the ventilators, which are an essential part of all apparatus for draining.

Foul water is regarded by many as even a more common cause of disease and death than foul air. Cholera, whatever may be its origin, is undoubtedly propagated by foul water. The course of the mains in London was found to indicate exactly the progress of this fatal disease during several epidemics. Those districts where the water thus supplied was foul were struck with cholera, while those furnished with pure water

escaped unharmed. Even where two mains ran side by side, in one of which was polluted and in the other unpolluted water, the disease was confined exclusively to the people who obtained their supplies from the former. Typhoid fever is supposed not only to be propagated by, but to derive its origin from, foul water. In Guilford, a small town in England, two hundred and fifty cases occurred within the short space of a single month. The district in which they took place was found to be supplied with water from a "reservoir filled from a new well which, through the drainage of a fissured chalk stratum, received the soakage of several sewers." Here were cause and effect so apposite, that no one could question their direct relation. The foulness of the sewers had poisoned the water, which, in its turn, had poisoned the drinkers of it.

When a cistern is necessary, as it may be where there is no public supply of water, it should be constructed of strong slate with a perfectly smooth surface. To this it would be well to have a filter attached, and all water for drinking should be filtered. This can be easily done with merely a small sponge and a little charcoal, the former of which should be frequently cleansed, and the latter occasionally renewed.

CHAPTER III.

The Air in the Ground.—The Proportion contained in different Soils.—Currents of the Air of the Ground.—Every House ventilated from below.—Contamination of the Air of the Ground.—Ground permeable by poisonous Gases.—Interesting Illustration of Poisoning by Gas.—The Priest's Story.—The Influence of Temperature upon the Diffusion of poisonous Gases.—Gaseous Emanations from the Soil greatly to be feared.—How the Ground is polluted.—How to prevent this Pollution.—Architectural Preventives.—Wet Walls.—Their Danger.—Diseases produced by wet Walls.—Quantity of Water used in building a House.—Different Powers of Absorption of Water by various Kinds of Building Material.—Mistakes of Tenants in Regard to Dryness of Walls.—Effect of Construction upon Moisture of Buildings.—How to dry Walls.

NATURE, in its beneficence, is very profuse in supplying the breath of life. The air not only abounds above us and about us, but under us. The ground is full of it. This, though not discernible by our senses, is easily made manifest by the tests of the physicist. All soils contain air in a greater or less proportion. It forms no less than thirty-five per cent., or about one-third of the whole volume of gravel, and a considerable

part of that of sand, clay, and even some rocks. Sandstone, which is hardly less porous than loose sand, contains a notable proportion of it. This air of the ground is not torpid and stagnant, as might be supposed, but is readily and constantly put in motion by the same forces which give movement to that of the atmosphere. The wind blowing upon the surface of the earth stirs the air within it, and any difference of temperature above and below ground gives more or less rapid circulation to subterranean as well as superficial currents.

The pressure of the heaviest superstructures is unable to resist the ascent of the air, and thus every building raised by the hand of man is ventilated from below the ground as well as from all the surrounding atmosphere. This subterranean supply of air might be a source of health, but it is generally made by perverse ingenuity a cause of disease. Wherever man fixes his abode, he diligently sets to work contaminating all that he touches; so that the breath of life is only to be found in its purity where there is no living human being to need it.

The soil, which naturally contains wholesome air and gives facility to its every movement, is not less permeable by poisonous gases, which are

often found to pervade and issue from it. All large cities and populous towns may be said to be lying upon a stratum of poison, ready to be cast like the venom of a hidden serpent upon every one who passes. It is easy to find illustrations of the fact that people are poisoned through the ground, since it is almost a daily occurrence. Here is one, the truth of which is guaranteed by the best authority: In a residence at Augsburg, apparently endued with every qualification for health and comfort, several priests lived together. On a certain morning one of these, not the least zealous and prompt in the performance of his duties, was missed from his usual post at the Matin service. His colleagues hurried back to their common dwelling in search of the missing priest, and found him lying, prostrate and insensible, upon the floor of his bed-chamber. A doctor was immediately called in, and at the first sight of his patient declared him to be suffering from an attack of typhus fever. The Sisters of Charity, upon whom devolved the duty of nursing him, and those clerical associates who were active in their sympathy and prompt to visit him and give assistance, were, a few hours after, attacked in the same way. The doctor did not hesitate in his diagnosis, and pronounced the ad-

ditional cases also typhus fever. As the first patient seemed now almost *in extremis*, his parents were sent for, and a general alarm prevailed in Augsburg. Among the inhabitants was an old woman* by whom, in common with the rest of the people, the suffering priest was greatly beloved. She no sooner heard of his attack than she hastened to visit him, and had hardly opened the door and entered the room, when she exclaimed, "Gas! gas!" The doctor, firm in his diagnosis of typhus, *pooh-poohed* the suggestion, and was backed by the others who were present, and declared that there was no gas ever used in the house, and there were not even any means for the purpose. They acknowledged, however, that there was a bad odor sufficiently sensible, but this they attributed to the emanations from the sick. The old woman still, however, adhered to her view, and obtained permission to remove the first patient, her good pastor, to her own dwelling. The priest had no sooner breathed the fresh air, on being carried out of the door, than he began to revive, and during the very first

* This sensible, energetic, and benevolent woman was the landlady of "The Three Moors," of Augsburg, an inn which we were not surprised to hear is famous for its good entertainment.

evening of his removal to the new abode he became so much better as to make an importunate demand for food. He soon got entirely well.

The old woman, thus confirmed in her gas theory, and eager to save the remaining patients, who had continued to increase in number in the priests' house, now had an interview with the manager of the gas-works which supplied the town, and prevailed upon him to make an investigation. He accordingly set, without delay, some skillful workmen to dig up and examine the condition of the gas-pipes which ran closest to the neighborhood of the priests' residence. This being done, a leak from which gas was issuing into the ground was found and stopped. The air of the house where the Sisters of Charity and the sick priests were still lying was perceived at once to improve, and with it all the patients, who finally completely recovered from what the doctor even was compelled to acknowledge was not typhus fever, but poisoning by gas.

Von Pettenkofer, who is the voucher for the narrative just given, accounts for the entrance of the gas into the room of the priest first poisoned by the fact that, as was well known, he always kept up a larger fire in his stove than the other occupants of the house. The greater heat drew

the air from the ground with more force into his chamber than into the other apartments. When, however, it was vacated by his removal, its fire being extinguished, it necessarily became cold, and the gas, no longer entering it, diffused itself through the warmer rooms and poisoned their occupants.

There can be no doubt that deleterious gases which enter the ground will find their way out through the porousness of the soil, and entering occupied buildings, deteriorate the health and destroy the life of the inhabitants. This is facilitated by the greater warmth of houses during winter, producing a draught from the colder ground. There are few dangers to a dwelling from without which are more to be feared than these gaseous emanations from the soil. They often enter into our most secluded interiors without revealing themselves at first to the senses, and are only finally recognized by the havoc they make. There are no more insidious and fatal poisons. It becomes, therefore, of the utmost importance for health and life to keep the ground unpolluted. By the removal of all dung-heaps, cess-pools, and other sources of corruption, and a thorough system of drainage, with the fullest supply of pure water, it is possible to do a great

deal; and whatever can should be done toward preventing the contamination of the air of the soil, and thus save us from being infected by exhalations from below, and dying in our pent-up houses like poisoned rats in their holes. People are very apt to suppose when once an offensive thing is under ground there is no further annoyance to be feared. This, however, is a fatal mistake, and thousands of lives have been sacrificed to it.

The evils arising from the impurities of the soil may be slightly mitigated, perhaps, by spreading a thick coating of cement over the ground of the vaults, cellars, and court-yards, but this will indeed be only a mitigation, and nothing effectual can be done without thoroughly getting rid of all sources of corruption, or removing them to a remote and safe distance from the dwelling.

There is a danger to health and life in newly-built houses often feared but seldom sufficiently guarded against. This is the wetness of the walls. All those diseases which are the results of what is commonly called catching cold, and are by no means the least of those to which the human being is subject, are often attributed by the doctor to living in dwellings not sufficiently

dry. Catarrhs, the various affections of the lungs, rheumatism, and that now so common and fatal malady, Bright's disease of the kidneys, are said to be frequently produced by this cause. Wet walls, by the evaporation from their surfaces, a process which is constant as long as a drop of moisture is left, not only produce a positive cold, but, being good conductors of heat, take away the warmth of other bodies exposed to their influence. Thus those living in damp structures are liable to be chilled in two ways—indirectly by the rapid loss of their heat, which is conducted away by the wall, and directly by the impression of the cold which comes from the evaporation of its moist surfaces. These effects are especially dangerous to health, since they are, as it were, one-sided. The cold acts partially, and thus the heating process of the body, which should be uniform and equable, is deranged, with the ordinary consequences of irritation, congestion, and inflammation.

There is another hygienic danger in wet walls. In becoming saturated with moisture they lose their permeability by air, and the house is deprived of one of its chief sources of healthfulness —the ventilation through the materials of which they may be composed.

A contemporary writer,* who seems to be fully alive to the dangers of new houses, says: "One of the many errors which people who build houses are apt to commit is that of living in them, or rather dying in them, before they are sufficiently dry for occupation. It not unfrequently happens that a man, disgusted with the defective sanitary arrangements of the generality of houses, ancient and modern, builds a dwelling for himself and his family, constructed with all the latest improvements, and in his extreme anxiety to commence a career of longevity rushes into it almost before the workmen are out of it, and while the walls are still saturated with moisture. The consequences are as might have been expected: in addition to the architect's charges, the rash owner is called upon to pay within the first few months a further bill to the doctor, and too often to the undertaker also. A house agent, not long ago, being asked why the house agency business was so commonly combined with that of the undertaker, grimly replied that the two 'went together;' and on being asked for a further explanation, stated that he had found, as an almost invariable rule, that when as a house agent he found a tenant for a newly-built house, he was

* Pall Mall Gazette.

applied to as an undertaker on behalf of that tenant or some member of his family within a twelvemonth from the date of occupation. He added that he himself (the house agent) would be sorry to live in any house 'that had not been baked by six summer suns.' Whether this amount of baking is absolutely required is a question for doctors and architects to decide; but there can be no doubt whatever that a want of caution in this respect leads occasionally to the most lamentable consequences. An instance in point will be found in the case of the Peabody's Buildings, mentioned in the annual report of the medical officer of health for Southwark, lately printed. It seems that these buildings have a death-rate of $23\frac{1}{2}$ in 1000 persons living, or 1 in 43. In other metropolitan model buildings the death-rate only averages 17 per 1000. The less favorable state of health prevailing in Peabody's Buildings is attributed to their being too soon occupied after construction, many of the ground-floors having been found to be still very damp some months after the buildings were inhabited."

When the quantity of water necessarily used in the construction of a building, apart from the absorption of moisture, going on more or less

constantly, is considered, it will not surprise any person that our new houses are damp, but rather astonish most people that the old ones should ever become dry.

Any ordinary observer will have remarked the great demand for water by the mason when building a house. A well or pump, if not conveniently at hand, is constructed at once as the first requisite for conducting the operation, and during every step there may be heard the urgent call to the laborer for water! water! A careful investigator* states, as the result of his experiments, that a well-burned brick, of medium hardness and of ordinary size, is capable of absorbing more than ten per cent. of its weight of water. It may be assumed, however, that, in the course of the operations it is made to undergo in building, it takes up only five per cent. Now we are told that for the construction of a house of three stories, each of which contains five rooms and a kitchen, 167,000 bricks† are required. A single brick weighs five kilogrammes, and as it is supposed to absorb five per cent. of its weight, 167,000 bricks will take up during the building of the house 41,750 kilo-

* Von Pettenkofer.

† The bricks here spoken of are those ordinarily used in Munich.

grammes of water, which is the equivalent of 41,750 litres. In round numbers, we may put the quantity of water absorbed by the bricks in the course of the construction of the house described at 15,000 gallons. One-fifth of the whole masonry is composed of mortar, and this is much more absorbent than brick. We will suppose that the quantity of water taken up by the mortar is only equal to, although it must be considerably more than that of the bricks, and thus by the use alone of these two substances we shall have employed 30,000 gallons of water in the raising of our house.

Most of this enormous quantity of water must be got rid of in some way before the dwelling can become sufficiently healthful for the habitation of man. These 30,000 gallons, which are saturating the outer and inner walls, the ceilings, and even the floorings, from the basement to the summit, filling the pores of the bricks and plaster, the stone and the slate of every new house, can only be discharged by one means. It is obvious that they can not be pumped or wrung out, either by mechanical or physical force, drawn off or boiled away. It is by evaporation alone, through the medium of the air, that this water can be made to disappear and the dwelling rendered sufficient-

ly dry for healthy occupation. This process essentially depends upon the moisture of the air and the temperature of the water. If the former is not sufficiently dry and the latter too cold, the drying of a house by evaporation will be almost impossible; and under the most favorable conditions it must be necessarily a very slow process.*

There is a mistake frequently made by the hasty occupant of a new dwelling, which often proves too precipitately fatal to allow even of the leisure required for a useful repentance. Inspecting the surface of the walls and finding them to all appearance dry, he does not hesitate to accept the assurance of the builder, confirmed by his own investigation, that the house is in a fit condition to be occupied. He accordingly moves in with the utmost confidence, but has hardly made his first fire, when he discovers that the walls, which have been declared by others and felt by himself to be "as dry as a bone," begin to show on one surface or the other, in this corner or that, now small islets and then great continents of moisture. From the windows, too, he sees full streams of

* At the mean annual moisture and temperature of the atmosphere of temperate climates, it has been estimated that 1360 millions of cubic feet of air are necessary to dry a house built of 167,000 bricks.

sweat rolling down, and feels the whole atmosphere of the house to be reeking with a musty dampness.

We need hardly say that the unhappy occupant has been the victim of the ignorance or cunning of the builder and a presumptuous confidence in his own senses. His house, in a word, was not dry when he entered it. There was certainly a sufficient appearance of dryness before occupation to delude the senses of any ordinary observer, but no sooner has the dweller entered with his family, than these obvious proofs of continued moisture manifest themselves. The atmosphere has become suturated with the watery vapor exhaled from the lungs and skin of the inhabitants of the house, and produced by the various functions of the household, in which a free use of water at a high temperature is requisite. If the walls had been thoroughly dry this moisture would have passed through their pores, but meeting with the opposing water with which they are saturated, it is deposited in distinct spots upon their cold surfaces. The apparent dryness which had deceived the occupants of the house, was owing to the air mixed with the water contained in the superficial pores of the material composing the structure. All

the rest were evidently filled with water only, for no sooner was a considerable quantity of watery vapor produced inside of the dwelling by habitation, than, finding no outlet through the wall, it was necessarily deposited on its surface.

It must not be supposed that when moisture is found to dim the inside of the window-panes that the building is not dry. Whenever the atmosphere of a dwelling is saturated with watery vapor, the glass, for it is not porous, will show indications of it, but the walls will not unless they are already wholly or almost filled with humidity. Moist spots showing here and there upon the walls of a house soon after occupation, however dry before they seem to ordinary observers, and are pronounced by interested persons, may be taken as a sure proof that they were never in reality so, and that no one could live within their inclosure without a dangerous risk to health and life.

The obvious conclusion, from the fact that new structures are saturated with water, which can only be got rid of by heat and air, is that it is necessary, for thorough drying, to submit them for a long time to an abundant supply of both. A constant and high degree of warmth through numerous fires, and a thorough ventilation by means

of open doors and windows, must be kept up, and no one careful of his health should ever dwell in a new house until many months after its construction, during which these means for driving away its moisture have been industriously used.

Since buildings with walls of porous materials are, as we have seen, the most readily permeable by air, and necessarily the best ventilated and easiest dried, it may be questioned whether the structures of iron and zinc now getting into vogue are as favorable to the health of their inhabitants as the old-fashioned ones of wood, brick, and stone. At any rate, it does not admit of doubt that mechanical contrivances for ventilation are indispensable in the houses of metal, though perhaps not in those of other material.

Something can be done, perhaps, in the course of its construction, toward insuring a dry building by the various artifices of the builder, such as placing a layer of concrete under the whole undersurface and erecting a low wall of perforated brick around the base, with a space of a few inches left between them. These contrivances may guard against the absorption of fresh moisture from the ground, but will never discharge the water abounding in every new structure of masonry. This can only be effected by the persevering application of heat and air.

CHAPTER IV.

Whence comes the Heat of our Bodies?—How Heat is got rid of.—How retained.—Heating of the House.—Furnaces.—Steam and hot Air.—The English Fire-place.—Its Advantages and Disadvantages.—The Porcelain Stove.—Its Advantages.—The Advantages of Diffusion of Heat.—The Dangers of separate heated Apartments.—Hot Interiors in America.—Their Effect upon Habits and Health.—Human Exotics.

It is commonly believed by unscientific people that the warmth of our bodies is mainly derived from the heat of the sun in summer, or artificial fires and thick clothing in winter. Every one, however, who is the least acquainted with chemical physiology knows that the animal heat is the product of a vital process going on constantly within the body. This is so much of an internal action, that it will continue quite independently of the influence of any outside warmth, whether derived from natural or artificial sources. The temperature of the living body in the hottest summer and coldest winter is the same. The blood of the African, lying in the hot sand of the tropics and baking in the sun, is hardly warmer

than that of the Esquimaux, shaded by the night of his long winter and perpetually surrounded with ice.

It is not, however, to be concluded that the sources of external warmth have no important part to act in the economy of life. The contrary is proved by the experience of every poor unclad wretch freezing in the winter's blast, and overworked laborer withering under the stroke of the summer's sun. The artificial means that we may have of warming in winter and cooling ourselves in summer, are not only essential to comfort but to health and life; for, though it is true that the natural process for the production of animal heat will continue for a time without these external aids, it will do so only at the expense of the animal organism, the various parts of which will become deranged and the equilibrium of their common action lost.

A superfluity of heat is produced in the body of every human being while in the regular performance of his natural functions. This is got rid of by radiation, evaporation, and conduction; and upon the more or less rapidity and thoroughness with which they act depends the sensation of cold and heat. The purpose of all artificial cooling or warming apparatus is to regulate the ac-

tion of these processes. In summer, as they are naturally slow to operate in consequence of the surrounding heat, we strive to avail ourselves of such means as are known to quicken them. We avoid the hot sun, we seek the shady place, we invite the breeze, and we clothe ourselves in light and thin garments. We, in a word, surround ourselves with as cool objects as possible—those, in fact, which are known to favor these three processes essential to getting rid of the superfluous warmth of our bodies. In winter, on the contrary, there being in consequence of the cold a tendency to an excessive corporeal radiation, conduction, and evaporation, we do our best to check their action, by using means the opposite of those employed in summer. We consequently surround our frames with objects called warm, or those which are unfavorable to the processes by which the body gets rid of its heat. We cover ourselves with fur and woolen, and warm the air of our houses by means of fires. It is by these external aids, acting in harmony with the internal economy of his body, that man is enabled to adapt his life to the variations of the seasons, and the extremes of temperature in different climates.

It would seem a simple thing enough to get all the warmth desired in the coldest weather by

merely burning any of the combustible material in which the world abounds, in sufficient quantity to heat the atmosphere surrounding our bodies. The warming of our artificially constructed houses, however, is by no means so simple a process. There are three requirements of the household —health, comfort, and economy—which it is not always easy to combine.

The whole house in winter should be, if possible, of an uniform temperature, and this is only to be obtained by means of a general heating apparatus; what the French call a *calorifère* and we a furnace, is the best apparatus undoubtedly for this purpose. Whether air or steam be used as the medium of diffusing the heat, we think, as regards health, of little moment. The latter has the advantage, perhaps, of giving a more equable warmth, and drying less the moisture of the atmosphere; but the machinery required is expensive, and not very easy to regulate, except where it already exists for the generation of steam for other purposes. The ordinary hot-air furnace is readily managed, and, if its use is combined with a proper regard to ventilation, will exert no unfavorable influence upon comfort or health. The universal warming of a house by this or other means has the advantage of admitting a free open-

ing of doors and windows, and thus giving circulation to the air without reducing too much the temperature. The English people are great advocates for their national grate* of sea-coal. They descant upon the cheerfulness of its glow, and the power with which it draws to the fireside and invites to social enjoyments. The gloom of a climate seldom brightened by the rays of the sun causes the Englishman naturally to seek a relief from the sombreness of all that surrounds him in the glare of artificial light and the gorgeousness of manufactured colors. He thus delights in the blaze of his gaseous coal as in the brilliancy of a variegated neck-tie and waistcoat. We confess that the Tartarus of a London winter requires all the enlivenment of an open fire of blazing bitumen to reconcile us to the deprivation of the sun's light, and to save us from total despair of the future smiles of Heaven.

The open grate is not, in our brighter climate, an essential requisite for the enjoyment of life, but, if desired, it can always be used as an adjunct to the furnace or other means of warmth. It is, however, impracticable, during our coldest weather, thoroughly to heat a house with the open fire-

* The open grate, as generally used in England, is not, in fact, of native origin, but was invented by Count Rumford, an American.

place alone, however great may be the combustion raised. There are many disadvantages, too, attendant upon the use of the grate and an exposed fire of coal. Most of the heat produced is lost by passing up the chimney, and the only warmth left for the behoof of the occupant of the room is that of the hot bars in front, close to which he is obliged to place himself, with the disadvantage of stewing before while he freezes behind, or *vicè versa*, so that in fact his body is perpetually alternating between a chill and a simmer. The grate fire is inadequate and therefore costly, and its emanations of gas and dust are not only fatal to cleanliness but dangerous to health. The open fire of wood, though less filthy and unwholesome, is still more expensive in most populous districts, and not so heating.

For warming a single room or a small suite of contiguous apartments, the porcelain stove of the continent of Europe has many conveniences. It can be made ornamental, and is cleanly and economical. Once well heated, it retains its warmth and continues to radiate it for a long time, requiring little skill and attention in its management. Where generally used, however, the absence of a widely open fire-place, which is thought to be a good ventilator, is regarded by some as a disadvantage. But if the porcelain

stove is allowed its full draught, we can not see why it should not aid as promptly in ventilating as the grate, while, unlike the latter, it emits neither smoke nor deleterious gas. Stoves of metal, and especially those of cast-iron, are objectionable, for it has been found that the pernicious gas generated by combustion forces its way through the material of which they are composed, and pollutes dangerously the outer air.

No method of partial warming should be accepted as a substitute for that which is adapted for the diffusion of heat throughout the whole dwelling. When a room is separately heated, it becomes necessary, in order to raise and keep it to the degree of temperature required for comfort, to close it almost hermetically, lest any communication with the other unwarmed apartments of the house should render it too cold. The consequence is that such a room can never be properly ventilated, and will generally be overheated. It is not difficult to warm a shut-up apartment enough, but by no means easy to prevent it from being heated too much. A hot room in a cold house has the further disadvantage of sucking in, as it were, through all cracks and crevices the foul air which fills the whole structure, when closed fast, as it is sure to be, against every breath of winter.

The temperature of a house generally warmed by a furnace or other means requires, of course, to be carefully regulated. The thermometer must be diligently consulted, and the heat, as a rule, not allowed to exceed 65° of Fahrenheit.

People generally, in America, keep their dwellings in winter too warm, and are apt to justify the high degree of temperature to which they raise them, by their experience of the comfortable endurance in summer of the same or greater heat. They need to be reminded that in consequence of a modification of the economy of their bodies, in accordance with the change of season, the same external warmth is neither comfortable nor healthful in winter. Hot houses are not necessarily ill-ventilated houses; in fact, their very excess of heat tends to draw within them an abundant supply of air from without. An overheated atmosphere, however, has the serious disadvantage of not only indisposing the human body to meet, but unfitting it to endure, the rigor of winter. Thus the exotic creatures of our hot-houses languish away indolently at home, breathe only a heated air, and, neither giving to their limbs nor lungs the requisite exercise, lose their vigor, and are withered by the first blast of winter that may chance to touch them.

CHAPTER V.

Solar Light essential to Life.—A Vegetable Illustration.—Health of People living Under-ground.—Mines, etc.—Effect of Light upon Growth and Vigor of the Young.—Solar Light prescribed by the Doctors.—Aspect in Regard to Light to be attended to in Building.—Precautions to be taken in large Towns.—New Cities and old Towns.—How to obtain Light in Houses.—Tax on Light in England.—Its Consequences.—Plenty of Windows.—Dungeons.—Parlors.—Heavy Curtains.—Dark Rooms.—Motives of Ladies.—Miss Nightingale's Testimony as to Effect of Light upon the Sick.—Effect of Artificial Light upon the Air of the Dwelling.—Philosophy of Artificial Light.—How to counteract the bad Effect of Artificial Light.—Best Kinds of Light.—How to burn Gas.

SOLAR light is almost as essential to life as air. Without it most animals, and even plants, dwindle, become diseased, or die. The familiar process of the gardener in cultivating celery, by which he buries the plant as far as possible in the earth, has no other purpose than to deprive it of light, and thus render the vegetable pale and delicate. The result, however highly appreciated by the artificial taste of the epicure, is none the less a morbid one, and the whiteness

and tenderness of the favorite esculent are as much symptoms of disease as the pallor and weakness of the rickety child. In fact, the same cause—the deprivation of light—produces the same effects in both.

Miners who spend their days beneath the surface of the earth, and people who live in underground apartments or darkened abodes, have always pale complexions and weakened bodies.

The growth of the young and the development of their vigor are arrested by habitual confinement to habitations from which the sun's light is excluded. The physician is so well aware of the effect of the solar rays upon health and strength, that it is a favorite prescription with him to order the weakly and sick to be directly exposed to them. It is the practice, on every clear, warm day, in the Child's Hospital of Paris, to arrange the little patients in successive rows upon a broad structure of wood inclined toward the sun, and let them bask for hours together in its vivifying rays. The result is found to be excellent; and there is no tonic in the pharmacopœia which will compare in efficacy with that great natural invigorator, the sun.

In building and planning all dwellings, it is essential to consider the influence of the solar rays

upon the health of their inhabitants. If possible, the aspect of the structure and its plan, as well as the arrangement of its furniture and decorations, should be such as to admit of a free exposure without, to the influence, and of a plentiful diffusion within, of the light of the sun.

In populous towns, the inhabitants for the most part are forced to submit to the exigencies of municipal order and regulation, and consequently to live more or less constantly in the shade of great walls of brick and towering heights of stone. In our land the foundation of a new city is almost a daily event, and the open field and free path of the country of to-day become the populous house, block, and the thronged street of to-morrow.

The founders of the ever-rising Romes and Carthages of our aspiring people should not, in their haste to raise temples of brick with porticoes of plaster, and rows of palaces with columns of wood and capitals of tin, forget that cities ought to be designed as healthful abodes, and not merely as objects for photography to turn into delusive pictures whereby to catch the unwary settler.

The old towns of Europe were constructed, for the most part, with the view of huddling together

the houses as closely as possible within the inclosure of the wall of a castle, that their inhabitants might be guarded by the warlike baron against his enemies. His protection, it is true, was "such protection as vultures give to lambs, first covering, then devouring them;" but the motive for keeping them closely penned up remained the same. Of course, towns constructed for such a purpose were deprived of necessary light as well as air, and were constantly ravaged by worse enemies than the baron or his foes—the fatal plague and sweating sickness. In this country there is certainly space enough, and we should expand our cities accordingly, and allow no design in their construction to shut out unnecessarily the light or any other health-giving blessing.

However unfavorable may be the original plan and position of a town for an abundant supply of solar light to its inhabitants, the builder and occupant of every house have it in their power to secure for themselves a certain quantity of this essential of health. This is obviously to be obtained, in the first place, by having plenty of windows.

In Great Britain, a heavy tax was for many years imposed upon every dwelling in which there

were more than a certain small number of windows of a fixed size, so that most people except the very rich were forced to deprive themselves of the necessary supply of light. New houses were accordingly constructed with as few and small windows as possible, and many of the old ones which happened to have the taxable number were made to avoid the fiscal imposition by closing up every supernumerary opening which might possibly admit a solar ray. It was thus not an unusual thing to see a great structure of walls of stone and brick casting heavy shadows of darkness within and without, while here and there appeared indications of former sources of light which had been sedulously obstructed. This view of a bunged-up house, in the dismal atmosphere of London fog and smoke, struck the observer as not unlike that of a man trying to see in the dimness of twilight, while voluntarily blinding his eyes. The tax being found to be not only a scant source of revenue, but an abounding cause of discomfort and ill health, has been abrogated, and the English people are now in the full enjoyment of whatever spare ray of light may succeed in struggling through their thick atmosphere of mist and coal-smoke.

We would advise all denizens of the town to

have as many windows as possible, as well as skylights and other means by which the healthful sun's rays may enter into their dwellings. The peculiar construction of our town houses, necessitated by the long parallelogram of the lots and close junction of the buildings, although not the most favorable to sources of light, is still not necessarily so conducive to darkness as it is often allowed to be.

A less desire to pile up the large masses of masonry which cover every spare inch of a short and narrow bit of ground, and cast heavy shadows, making darkness necessary and lightness of the interior impracticable, would greatly tend to improvement in the construction of our dwellings. That middle dungeon, between the front parlor and dining-room, in which families are so fond of immuring themselves, would no longer exist, and the health and enjoyment of daily life be greatly increased. Bow-windows might be generally adopted, and the admission of light into the house thus more favored. The blind, though indispensable, perhaps, in the hotter, should be rarely used in the cooler seasons. The impenetrable shades, heavy curtains, and other contrivances for the production of darkness, by which tenacious old ladies strive to hide, and aspiring young ones

to improve, their complexions, are not favorable to health, however successful they may be in keeping up the delusions of faded age and the hopes of progressive youth.

"It is the unqualified result of all my experience," says one* well entitled to speak of it, "with the sick, that second only to their need of fresh air is their need of light; that, after a close room, that what hurts them most is a dark room, and that it is not only light, but direct sunlight they want. You had better carry your patient about after the sun, according to the aspect of the rooms, if circumstances permit, than let him linger in a room when the sun is off. People think that the effect is upon the spirits only. This is by no means the case.... Who has not observed the purifying effect of light, and especially of direct sunlight, upon the air of a room? Here is an observation within every body's experience. Go into a room where the shutters are always shut (in a sick-room or a bedroom there should never be shutters shut), and though the room be uninhabited, though the air has never been polluted by the breathing of human beings, you will observe a close, musty smell of corrupt air—of air, *i. e.*, unpurified by the effect of the sun's rays. The

* Miss Nightingale.

mustiness of dark rooms and corners, indeed, is proverbial. The cheerfulness of a room, the usefulness of light in treating disease, is all-important."

All the ordinary processes of illuminating a dwelling artificially, deteriorate the air we breathe. The light produced is the result of the combination of burning bodies with the oxygen of the atmosphere, which is thus deprived, in proportion to the degree of combustion, of a constituent essential to its normal composition. This constituent moreover, oxygen, is the vital principle of air. Without it life is impossible, and a lessening of its proper quantity in the composition of any atmosphere we breathe is unfavorable to health. Nor is the loss of this essential source of vitality the only ill effect of artificial illumination. The combustion without which light is impossible exerts a double malignity—it takes away a life-giver and gives back a death-producer; for the process of burning mainly depends upon the union of the carbon of the combustible with the oxygen of the air in which it is burned, thus producing the poisonous gas, carbonic acid.

With a sufficient number of burning lights, the air of a close apartment may be easily made a deadly poison to all who breathe it. The char-

coal-burner, by the dim fire of which the suicidal wretch lies down to die, exerts its fatal power through the same chemical process as a wax-candle illuminates the gayety of a ball-room.

There is no other way of counteracting the ill effects inevitable, even with proper usage, of the ordinary lights for domestic purposes, than by abundantly ventilating our dwellings with pure air. Bad means of artificial illumination, or improper usage of good ones, are productive of such evils as can and should be avoided. All materials which are not as thoroughly combustible as the requirements for complete illumination will allow, should be rejected. Ill-made candles, and inferior oils, which give out a great deal of smoke in burning, are doubly injurious, for they corrupt the air, not only as every other artificial source of light, by the necessary process of combustion, but also by the poisonous vapors they emit. A smoking light, whatever may be its nature, may be regarded as especially unwholesome.

It is thought by some experienced architects that a ventilator should be provided for each gas-burner, wherever used. This, however, is hardly necessary; for when the gas is of an average quality, and the gasometer so regulated

as to avoid an excessive pressure and insure a thorough combustion, there need be no fear of any unusual ill effects. All consumers of gas should be reminded, that if with these necessary provisions the burners are turned full on, there will be less danger of an escape of noxious vapors.

CHAPTER VI.

The Situation of the House.—Indifference to natural Beauty.—Affected Admiration.—Influence of natural Beauty.—How to choose a Site for the Dwelling.—Hills.—Drainage.—Effect of Trees.—Aspect of House.—Soil.—Antidote to Miasma.—Houses in Towns.—Nothing without Drainage.—City Prospects.—How crowded Cities are to be made healthful.—Who should benefit by Improvements.—Hospitals, etc., where they should be placed.—What to avoid in choosing a Site in Town.—Churches as Neighbors.—Slaughter-houses, etc.—The best Streets.—Gardens to the Houses.—A foolish Concession to Fashion.

THERE is nothing people talk so much and care so little about as the situation of the houses they dwell in. To have a good or a fine view, as it is termed, might be supposed, to hear the universal expression of sentiment on the subject, the chief end of living. An extended prospect of the beauties of nature, the sight of so many distant mountains, so much water, such an expanse of land surface, with its varieties of hill, dale, grove, and field, would seem to be indispensable to the happiness of the great majority of mankind. It is a fact, however, that most

persons in their daily life are quite indifferent to all the beauties of natural scenery. Those before whom they are always spread, and need not turn to look upon them, having eyes see them not, and those who are shut out from their view by a dead-wall care not, however easily it may be passed, to go beyond in search of a glance at them. A Swiss peasant would not raise his eyes for a moment from the root at which he is grubbing to look upon the Jungfrau transfigured with all the glories of the setting sun. A New York merchant will grope on day after day along brick walls without ever taking a step to enjoy the freedom of beauty so generously proffered by nature outside of his self-imposed prison. There are said to be men and women in our city to whom neither want of time nor money has ever been an obstacle, who have yet to spend the few minutes and coppers required to cross the noblest river in the world, and have, of course, never looked upon one of the finest views of natural scenery the eye of man can behold.

With all this real indifference to the beauties of nature, there is an affected admiration of them. That this admiration is not a genuine and spontaneous feeling, is apparent from the

forced attention given to the supposed attractions of natural scenery when the occasion seems to require it, and the general want of appreciation of all ideal representations of them by art. There is nothing to which the ordinary ear and eye is so shut as to descriptive poetry and landscape painting.

We do not wish it to be understood that because the beauties of nature are so little appreciated people should studiously avoid them. They may exercise their beneficent influences unconsciously to the beholder, and we therefore would encourage even the most insensible to surround themselves, if they possess the power, with all the charms of natural scenery. At the same time, it is hardly worth the while to sacrifice more substantial advantages to any sentimental fancy for the beautiful. Our purpose in directing the choice of a situation for a dwelling is to point out what may be rather conducive to health and comfort than to the gratification of taste and the enjoyment of nature.

Pure air, an abundance of it, and dryness, are necessary to the wholesomeness of the dwelling of man. If, in the country, one has more or less liberty of choice of situation, he should, if possible, select high ground for the site of his

house. It had better be placed on the slope than the summit of a hill, for the latter will be too exposed to wind and storm, while the former will be more or less protected, and at the same time offer the proper facilities for that great essential to the healthfulness of a dwelling, thorough drainage. With a house thus situated, moreover, below the extreme height there will be space of ground behind left for the planting of trees, to serve as a shelter from the heat of summer and the blasts of winter. It is a mistake, however, whatever may be the picturesque effect, to have trees very near the residence. They are reservoirs of moisture, and though they may secure the coolness of shade, they, by intercepting the air and hindering ventilation, render a house unwholesome. Certain trees, as the sycamore, elm, beech, and horse-chestnut, are especially interdicted by the experienced, while others are deemed allowable, as the cedar and various pines and firs, which, being of smaller growth and more meagre foliage, harbor less moisture, and do not interfere so much with the circulation of the air.

No dwelling can be healthful which does not receive on its surface, or at least on some part of it, the direct rays of the sun. The house may

be so placed or constructed that the glare of light can be subdued or diverted in such a manner as not to be excessive or too intrusive for comfort. The plan followed by some architects of placing the residence diagonally to the four points of the compass is a good one, as by this means the rays of the sun will fall aslant upon every side of the house, and thus the whole structure will have the full benefit of the healthfulness of their light, while their glow will be less direct upon the windows, and their intrusiveness more readily guarded against. The subsoil, before building a dwelling, should be dry, and the ground-floor never below the level of the road. Houses ought not to be placed in a recess cut in the side of a hill, for its site will thus serve merely as a reservoir for moisture and all kinds of impurity. An English writer says that when the cholera prevailed in Alnwick, "he found, upon examination, that in all cases where the houses were built in streets running in a sort of valley, with high ground back and front, the cholera was raging in those streets, while houses close by, but built under more favorable circumstances, were free from the plague."

Where there is good artificial drainage, it matters little what may be the nature of the soil upon

which the dwelling is situated. In the absence, however, of any contrivance by art for draining, it becomes a matter of the greatest importance to secure the best natural substitutes. Gravelly and sandy soils are the best, for water passes rapidly through them; and clayey and rocky the worst, for they hold fast the moisture, and allow it, with all its impurities, to evaporate and diffuse its poison throughout and around the whole dwelling. There is, in reality, no natural substitute for a good artificial drainage, which is, indeed, essential to the wholesomeness of every house. The exposure in our comparatively unsettled country to miasm is almost unavoidable at times. The best temporary expedients for protection against its dangers that we know of are open windows and blazing fires, even during the warmest days of spring and autumn. Complete drainage, however, is here again the only sure remedy to rely upon.

The inhabitants of large towns are, as regards the healthfulness of the situation of their dwellings, very much at the mercy of the municipalities which govern them. If the drainage should be imperfect, the cleansing of the streets neglected, the water supply scanty or unwholesome, and nuisances, such as soap-boiling, cattle-slaughter-

ing, and overcrowded tenant-houses, be permitted, the whole area of the town will be but a plague-spot to the infection of which every inhabitant will be fatally exposed. If, rich and luxurious, he builds a palace in the Fifth Avenue, all the perfume of gentility and the exclusiveness of fashion will not save him from the poison of the foul breath engendered in the crowded pens and reeking gutters of the slums of the city.

In the large town there is little opportunity for the gratification of a taste for natural beauty. As for prospect, what more can be said for the best situated city houses than that "they command an uninterrupted view of—of over the way, and they are within one minute's walk of—of the corner of the street?" Dick Swiveller, with all his flourish of rhetoric, could not heighten the description.

The recognized evils of the ever-increasing large town are only to be mitigated by diffusing as much as possible the inhabitants, and at the same time perfecting the hygienic conditions of their daily life. The railroads are doing something toward withdrawing the surplus population from the festering centres, but the only effectual reliance is upon a large expansion of the area of the populous city by a system of suburban residences,

not for the few rich, but the many poor. The price of the land, swollen by speculation to an exorbitant degree, is unfortunately a practical difficulty for the present. This may not, however, continue to be in the future, with a juster appreciation of the rights of the people at large to the enjoyment of the benefits of a value the increase of which is essentially due to their progress as a community, and not to the few separate individuals who are sanguine enough to anticipate and have the means to take advantage of it. In the mean time, much can be done to prevent the unhealthy crowding of a city by excluding from its limits all public institutions, the interests of which can be as well or better served without than within. Hospitals for chronic diseases of all kinds, boarding-schools, asylums for the blind, the deaf and dumb, orphans, widows, and all incapables, should, not only for the sake of their own but of the good of the community at large, be thrust far beyond the boundaries of all populous towns.

While such institutions are allowed to exist in crowded towns, it will be prudent on the part of any inhabitant who has the choice of the situation of his dwelling, to select one as remote as possible from them. All large structures are

bad neighbors, and especially churches, since, with their high walls and tall steeples, they shut out the beneficent light, prevent a free circulation of air, and throw a perpetual gloom most disheartening to the spirits of those who live constantly within their shadow. Such nuisances as gas manufactories, soap-boiling establishments, slaughter-houses, and church-yards, must be shunned as so many breeders of pestilence. Even the city grocer's shop, butcher's stall, livery or private stable, are unsafe neighbors, to which every citizen, in selecting a home, should give as wide a berth as practicable. Streets which terminate in a blind alley, or *cul-de-sac*, are never wholesome situations for a dwelling. The wider the avenue, the more open the position; and the less thronged the quarters, the better for health's sake.

Where the crowded city admits of a free space in front or behind the house, it is desirable to have it, since it secures a proper circulation about the structure. It is not well, however, to attempt to turn these small inclosures into miniature fields or gardens. They are better paved with flags or tiles; and if flowers and shrubs are desired, they can be kept in pots and boxes. Grass and exposed earth, large shrubs

and trees, however pleasing they may be to the senses, can only be so in summer, and at all seasons they are reservoirs of moisture and stiflers of air, from which the best constructed houses may suffer. It is evident that all the inhabitants of a city can not have a free choice in regard to the situation of their houses, but most, without doubt, could have control, more or less, of the internal economy of them. This, however, they generally, with submissive folly, yield up to fashion. Thus they shut up the best rooms in their houses, and keep the worst for daily use. In appropriating the various apartments to their several services, they should be guided by those laws of health and comfort laid down in the course of this book. Let them not, for example, deprive themselves of the little sunlight vouchsafed to city prisoners, because its scant rays shine only upon the front rooms which Fashion in one of her caprices has closed, with her seal affixed, and refuses to open except on the rare occasion of her formal visits.

CHAPTER VII.

Influence of the Dwelling upon the moral and physical Well-being.—An humble Cause of princely Suffering.—Children most affected by the Influences of Dwelling.—The Nursery. — Ventilation of Nursery. — Windows.—Rapid Circulation of Blood.—Rapid Diffusion of poisonous Air.—Position of Nursery.—Effect of Light upon the animal Spirits of Children.—Free Admission of solar Light necessary.—Furniture.—Floor and Walls.—The Necessity of Warmth.—The proper Mode of heating.—Ornamentation of Nursery.—Liveliness necessary.—Influence of Pictures.—The Box or Basket of Toys.—Toys as Teachers.—Kind of Toys required.—Grave Saws and sour Texts.—Children, how far Self-destructive.—Noise essential.

The influence of the dwelling upon the moral and physical well-being of man is admitted to be very great. Derangement of health, both of body and mind, perversion of sentiment, corrupt habits, and vicious conduct, disease, and even death, can be directly traced to the structure, position, and circumstances of the human habitation. The more or less thickness of a wall or the kind of material of which it may be built, the superficies of a window, the height or width of a door, the calibre of a chimney, or the course

of a waste-pipe, is often a controlling agent in settling the fate of man. The destiny even of the great, with all the protection of state officiousness and power, is made, at times, to submit in humiliating subjection. We have seen the heir to a throne* prostrate for months on the edge of the chasm of death, and a whole people in an agony of anxiety, with no nobler cause for princely suffering and danger and national trouble than the blunder of a joiner or the carelessness of a plumber's man.

It is more particularly the young who are affected by the influences of their habitual dwelling. The advanced in life are not only less susceptible, from the tougher structure and the diminished sensibility of maturity, but are not so constantly exposed, since they can withdraw themselves at their will, or by their daily pursuits are withdrawn from the habitation, while children, and especially infants, are necessarily more confined to it.

There is no part of the house, consequently, which demands such scrupulous regard, as to its appropriateness for living, as the nursery. This

* The Prince of Wales, who was attacked with typhus fever, in consequence of his exposure to the poisonous emanations from an ill-arranged drain.

term we use in the ordinary sense of an apartment for young children. It is made occasionally a sleeping-place, though this we think objectionable, and prefer to restrict it entirely to its other obvious uses. The bedroom for children, as for grown-up people, has peculiar requirements which more or less interfere with those of apartments adapted for other purposes, and, when possible, it is better to keep it separate. Regarding it, then, as the daily habitation of infants and young children, the nursery should conform in all respects to the acknowledged laws which govern the health of infancy and childhood.

The room, in the first place, should be sufficiently large to admit of the freest movement of the young, for it is essential to the mobile child that it should have opportunity of full play for all its limbs and muscles. Large extent of space, moreover, is necessary to the free circulation of air, for the renewal and abundant supply of which there should be adopted the best possible means. These should be permanent, and more or less independent of the occupants of the apartment, and especially of ignorant or thoughtless nurses. While a goodly number of windows is desirable, reliance should not be made upon these only for ventilation, though quite adequate for the pur-

pose, if discreetly used. In severe weather people are so apt to consider what may conduce to their temporary comfort and convenience in preference to that which is advantageous to their health, that they will, in order to avoid a puff of wind or a sprinkle of rain, deprive themselves of the pure breath of life. By means of movable ventilators fixed in the upper part of the room, or one of the higher panes of glass, there may be obtained a free supply of fresh air, and such a circulation secured as will prevent all stagnation of the atmosphere or retention of its impurities. Dangerous draughts, too, will thus be avoided.

The windows, however, whenever the weather permits, should be freely opened. Mothers and nurses should learn by heart, and give practical effect to the lesson taught by this homely distich:

> "If you open the windows more,
> You will keep doctors from the door."

It has been calculated that all the blood in the body of an adult person, which amounts to nearly three gallons, passes through the lungs in the short period of two minutes and a half. It is by this rapid movement that it is acted upon constantly by the air which is breathed, and adapted to the purposes of the human economy. The

blood thus running through the lungs, continues a course of equal speed throughout the whole frame, from the centre to the farthest extremity, from the heart to the tips of the toes and fingers. There is not the most minute and remote part of the animal structure which is not traversed by this rapid and perpetual current. The purpose of this ever-circulating movement is to expose the blood to the action of the air, in order that a change may be effected in it which is essential to health and life. This process can neither be performed, nor its ends attained in perfection, without a constant and abundant supply of pure air. The blood, however, will continue to circulate for a long time even when the lungs are breathing in a foul atmosphere. The activity of its movement, moreover, may not diminish, and thus the blood, polluted through breathing a noxious vapor, can diffuse throughout the whole human system, far and near, the poison it contains, in the short period of two minutes and a half! The lungs of children act, and their blood circulates with still greater rapidity, than those of grown-up people. No more need be said to impress upon the least judicious the necessity of having not only pure air, but an unremitting supply of it, in the nursery.

The position of the nursery should be such as to give it as much of the sun's light as possible. The solar rays are not only essential to health and life, but a source of cheerfulness appreciated by none so much as the young child. A glimpse of the early sun will brighten his face at once with delight, and, turning a rising frown of discontent into a smiling ripple of satisfaction, often allay his peevishness when he is most irritable.

The nursery, then, must by all means be as sunny as possible. All basement and underground rooms are consequently quite unfit for the habitation of the young, and the old too, in fact, and should never be used for the purpose. The nursery windows should be numerous, and kept free from heavy curtains, blinds, and all obstructions to the entrance of the sun's light.

The furniture should be as scanty as convenience will allow, and all sharp edges and projecting points studiously kept out of reach of youthful heads and limbs, so provocative of cuts, bumps, and bruises. The floor must have no carpets, which, with their flossy structure, are absorbent and retentive of impurities, and on the least agitation give rise to clouds of dust and floating flocks of wool, very irritating and

injurious to the delicate lungs of children. The best for cleanliness and health is a floor painted or coated with boiled linseed-oil, from which any dirt or impurity of whatever kind can be instantly removed, and all moisture soon dried up. Rugs, which can be readily moved and shaken free from dirt and dust, may be used when, in cold weather, additional warmth is required. Painted or colored walls are preferable to papered ones, for their surface can be constantly cleansed and renewed as may be necessary in case of contagion or other requirement.

Infants and very young children, whose bodily heat is of a temperature several degrees lower than that of the adult, require more artificial warmth. Their natural activity is, however, so great, that whenever not at rest, which they seldom are, the quickened action of the lungs and movement of the limbs of the young compensate somewhat for the lower temperature of their bodies. The nursery will hardly require, then, to be more warmed than the rest of the house, through which there should be diffused a general heat in winter, by means of the furnace, not lower than 60° or higher than 65° of Fahrenheit. The open fire-place, which is regarded by many as so good a ventilator, may be useful for this purpose, and

as a ready source of additional heat when required on special occasions—while, for example, washing an infant, or bathing in a case of illness. With its interrupted supplies of heat, the open fire of coal or wood can never be relied upon for comfort as a substitute for the uniform warmth of the furnace, while its constant consumption of the oxygen of the air and its own emanations of noxious gas, dust, and smoke, render it less healthful.

While a certain simplicity should characterize the nursery, it should by no means be entirely bare of ornament. The color of the painted walls should be of a warm tone. A subdued pink or lively salmon is a good tint, and variety might be given to the broad surfaces by the addition of a few lines or simple figures of frescoing. Pictures should never be absent from the child's apartment; they are not only essential means for educating the young, but serve as daily refreshers of the youthful spirits; and the joyousness of the whole life is greatly dependent upon the vivacity of childhood. Colored pictures, of a striking, objective character, large and distinct representations of animals—dogs, horses, and elephants—cheerful scenes of the fields and farm-yard, and groups of ruddy boys and girls playing and mer-

ry-making, should be so hung on all sides as to attract the sight and animate the spirits of the little inhabitants of the nursery.

The box or basket filled with toys is an indispensable requisite of all places where children may be confined for however short a time, and especially of the nursery, in which they spend so great a part of their early lives. The toy given to the child has not only the effect of a bone thrown to a growling cur—that of quieting him, though its power in this respect is very effective and beneficial. Playthings are the first and most impressive teachers of childhood. They direct themselves to its natural instincts and its earliest developments with an inherent fitness that no didactic teaching, guided by the most subtle tact, can equal. They invite the touch, they attract the eye, they enforce movement, they awaken observation, they excite curiosity, and teach just what the child wants and is adapted to learn—form color, substance, and the simple relations of material things to each other and themselves. Parents, moreover, need not exercise their ingenuity or strain their generosity in supplying their children with what they require. The costly and artful toy gives neither the enjoyment nor the benefit of simple and inexpensive things. An

infant will rejoice more over a picked bone than the coral-tipped bauble of silver or gold, and few children would leave the mud pies of their own making for the most choice and cunning bijou of Paris workmanship. The ball of india-rubber, the wooden block, and the rudest imitations of instruments of daily use—the spade, the wheelbarrow, and cart, and rough figures of familiar animals—the horse, the ox, the dog, and the cat, are sufficient to content the heart and occupy the attention of the most covetous and vivacious child of either sex, provided the indispensable doll is added for the special behoof of the girl. The nursery should never be without such or such-like objects within easy reach and *constant service* of its youthful occupants, and which, moreover, ought to be of a kind that are neither too delicate nor too costly for the rough treatment they are sure to meet with from the merciless little ones.

We are no great believers in the benefits of didactic teaching of morals and religion to the very young, and we doubt the efficacy of forcing into their memory grave saws and sour texts; but it may not be amiss to keep before their eyes a few sacred injunctions and well-accepted sayings, as "Honor thy father and thy mother," and

"Cleanliness is next to godliness," etc.; which, however, should be cheerfully printed in illuminated letters, and distributed tastefully about the room.

Children are not generally so inclined to self-destruction as the fears of their anxious parents lead them to believe. They have, ordinarily, at a very early age the instinct of life sufficiently strong to impress them with a sense of the necessity of taking a good deal of care of themselves. The liveliest baby is not always seeking to elude the mother's grasp and dash its brains out on the hard floor, the most agile harlequin of a boy is not constantly on the look-out for the opportunity of leaping through the third-story window and impaling himself upon the pikes of the iron railing below, and the most inflammably tempered girl not always ready for martyrizing herself by the side of the back-log. Accidents, however, will happen; so it may be well to put nurse on her guard, to secure the windows with a triple row of iron or strong wooden bars, and to fence in the fire-place with a substantial fender.

As children are not only by nature noisy, but as it is essential to their health and full development of their strength to cry, to bawl, and to romp, they should be allowed to use their lungs,

voices, and limbs to the fullest possible extent. All crabbed bachelors, therefore, and irritable old maids and others likely to interfere with these special privileges of infancy and childhood, should have their apartments as remote as possible from the nursery.

CHAPTER VIII.

The Necessity of Abundance of Sleep for Children.—The Sleepfulness of Infancy.—Should be encouraged.—Sleep in Relation to the Conditions of Life.—Purity of Air required by sleeping Children.—The Ventilation of Child's Bedroom.—Light.—Windows.—Warmth.—Position of Child's Bedroom.—Maternal Fondness and Pride, as Disturbers of Sleep.—Sleep after Feeding.—The Quantity of Sleep required by Children of different Ages.—Causes of Sleeplessness.—Cradles and Rocking-chairs.—Opiates.—Cheerfulness on going to Bed.—How Sydney Smith cured the Sleeplessness of a Child.—Darkness and Spirits.—The Bed.—Bedding and Bed-clothes.—Position in Bed.—Cleanliness of Nursery.—Treatment of empty Bed.

THE larger portion of infant existence is passed in sleep, a great abundance of which is absolutely necessary to the proper development of the child in all the early stages of its life. The newly-born babe, if in a healthy condition, only awakes to feed, and then but partially so, for it takes its nutriment with half-closed eyes and intermittent slumber, and, when sated, drops from the breast and falls fast asleep into the arms of its mother. There is hardly a single hour out of the whole twenty-four that an infant may be said to be

wide-awake. This lengthened slumber being a natural want, and an essential condition of the vigorous growth and sound health of the young, must be encouraged by all the means known to be conducive to wholesome repose.

It should never be forgotten that sleep does not withdraw the human being from subjugation to any of the laws which govern health and life during wakefulness. Awake or asleep, he is always the same thinking, feeling, breathing, digesting, and moving animal, and requires for the proper action of these various processes of life similar conditions of relation to the external world. The brain thinks, and all the senses receive impressions during sleep; for even the closed eye will open to a sudden glare of light, the lungs respire with undiminished force, the organs of digestion stop not in their work, and the muscles continue to act.

Purity of air is just as essential to the healthy respiration of the sleeping as of the wakeful person, and the requirements of the dormant infant are greater in the proportion of its more abundant slumber. The bed-chambers, therefore, especially of the very young, should be of a kind to secure a plentiful supply of fresh air. They must be spacious in every direction, of lofty ceilings,

and good length and breadth. Many parents and nurses seem to regard sleep so much akin to death as to think that the narrow dimensions of the grave of the one are suitable proportions for the abode of the other. Thus the sleeping infant, stifled with wrappings of divers sorts, is often deposited in dark, contracted inclosures, into which no more light or air enters than into a sealed tomb. All those blind corners, shallow niches, and recesses euphoniously termed alcoves, ventilated perchance, if ventilated at all, through a key-hole, if luckily the key should be out, and perhaps just illumined enough to make the darkness visible by means of an opportune crack in the door, can only be regarded as so many dreadful burial-places, to which the fact that they are often burial-places of the living, lends an additional horror. Any child set to sleep in any such narrow quarters, closed to the air and light, may be said, without exaggeration, to be entombed alive.

The bed-chamber, especially of the young, should be brightly illuminated with the sun's rays, and thoroughly ventilated by means of a free communication with the external atmosphere. No room without windows is a fit resting-place for a sleeping child, and these need never be

wholly closed when there is a proper provision, as there should be, for warming in winter the bed-chamber in common with the rest of the house. The temperature should never be less than 60° Fahrenheit; any excess beyond this may be easily checked by means of the windows, the free opening of which, at all seasons, may be regarded as not only safe but beneficial, when draughts are avoided, as they can easily be by keeping the doors shut if the windows are open, or *vicè versa*.

The sleep required by a very young infant is almost of an indefinitely large quantity, and its instinctive disposition to indulge in it should never be interfered with, but, on the contrary, greatly encouraged. By having the bedroom at a sufficient distance from the nursery, which, with a fair average number of vivacious little occupants, can not, and ought not, to be the special domain of silence, the necessary quiet for sleep may generally be secured. A child should never, if possible, be aroused from its natural slumber. Tender mothers should check a fondness which prompts them to such kisses and caresses as are likely to disturb their infant's repose. Maternal pride, too, which often impels to an exhibition of infantile beauty and grace at all times to every

admiring visitor, should forego its indulgence whenever baby is asleep. It should be recollected that the infant, while slumbering, is undergoing a process of too serious moment to its health and future development to be interrupted for the sake of a tickle to a mother's vanity from such light straws as the compliments of this or that male or female gossip.

Healthy infants will and should sleep at all times, and a daily slumber in addition to the nocturnal one is required by every child until he reaches at least two years of age. A babe will go to rest immediately after feeding, and the digestion of its simple and fluid nutriment be not deranged in consequence; but older children, when they have begun to live upon more solid food, should not be encouraged to sleep until an hour or so after their last meal.

The necessary quantity of sleep diminishes with the increase of age. A young infant is seldom awake; a child of two years of age ordinarily requires two or three hours of sleep during the day, and twelve hours at night; and most children beyond this age, until they have reached their teens, should have about ten hours of sound nocturnal slumber.

Sleeplessness is always an indication of de-

rangement of function or organic disease. Unnatural excitement often is the cause of an indisposition to sleep in children otherwise healthy. If kept up late at night, exposed to the glare and heat of the gas or other artificial lights, stimulated by the presence and vivacity of the society ordinarily gathered together at that time, and their curiosity aroused by the piquant topics of conversation, of which just enough is understood to create a lively wonderment, young children, when they finally are put to bed, are apt to lie awake in an agitated state. Their excited minds and irritated nerves keep their bodies, however greatly fatigued, and demanding repose, in such restlessness that sleep is impossible.

A healthy child requires no other inducement to sleep than his own natural instinct. Cradles and rocking-chairs are undoubtedly powerful means of producing slumber; so, in fact, are all stupefiers—chloroform, opium, carbonic and prussic acids. The motion of the cradle or rocking-chair owes its power of causing sleep to its power of causing stupor, and the application of it, however slight, to the delicate nervous system of the infant, should be avoided as dangerous. No opiates of any kind, whether authorized by the formularies of the regular doctor, or smuggled

into use under the disguises of the nostrum-vender, should ever be given to very young children. Laudanum and paregoric, soothing mixtures and sleeping cordials, are very dangerous remedies, which always injure, and often kill, when administered to a sleepless but not otherwise unhealthy child.

Children should, if possible, never be put to bed except when in a cheerful mood. A fit of anger or a fretful moment at bed-time will often disturb the repose of the whole night. Sydney Smith had a child who was kept wakeful by a state of nervous irritability arising from some unaccountable cause. This was seriously injuring his health and destroying his happiness, as well as preventing sleep. His father, with characteristic quickness of perception, recognized the seriousness of the evil, and with his habitual common-sense applied the necessary remedy. He accompanied his child for several nights in succession to bed, and sat by his side, narrating each time some cheerful story, or giving utterance to a lively effusion of fancy or humor, adapted to the intelligence and sympathy of childhood. The treatment proved entirely successful, and the boy was soon restored to the composure at bed-time essential to soundness of slumber.

Most children have a horror of darkness, which seems almost natural to the vague imaginations of the young. This can not be removed by a forced subjection, and should never be attempted. When it exists, the quiet presence of an elder person, or the small glimmer of a light through the partly-opened door of a contiguous room, will be generally sufficient to conjure away all imaginary terrors of childhood, and this slight indulgence should never be refused. We need hardly say that every child should be spared the unnecessary horrors arising from fictitious spirits, "Bogie," "The old Un," and other monstrosities invoked by a nurse's stupid fancy.

The kind of bed and its arrangement are very important in regard to their influence upon the sleep of the child. The chief points to be considered are their adaptation to the natural needs as to warmth, respiration, transpiration, and position of the healthy body. The infant, for security, is often put to sleep in a crib, and this, if made with open sides, to allow of a free circulation of air, is unobjectionable. It should be entirely naked of curtains, and so constructed that all parts of it and its contents may be easily accessible for airing and cleansing. The mattress of horse-hair is the best to lie on, for it gives all

the required warmth, while it admits of the passage and evaporation of the natural moisture and vapors of the body. It is, moreover, in consequence of its porousness, easily dried, ventilated, and purified. Its elasticity gives it the further advantage of yielding easily to the pressure and movement of the body, while its ready return to its original form prevents any inequality of surface which might cramp the frame and limbs and tend to disturb them permanently.

The feather-bed, which has none of these good qualities of the horse-hair mattress, should never be used, at any rate, for children to lie upon. It is advisable even to adopt hair instead of feathers for the pillow, as the latter is apt to be too heating for the head of the child, which has often a great tendency to an excessive sweating. The pillow should be always of a sufficient width to support the shoulders as well as the head, and never so high as to raise the latter inordinately. A careful attention to the position, in this respect, of the sleeping child is of great importance, in regard not only to his present health, but future grace of proportion. Any interference with the free respiration of the child must be carefully guarded against by a proper arrangement of bed, pillow, and coverings. No

curtain should be allowed to oppose the free access of air, and even light, provided its rays are not so directed as to shine in the eyes, and disturb the repose of the sleeper. Porous materials of wool are the best for the outer coverings of the bed, and cotton a more healthful stuff than linen for the inner. No padded quilts of patch-work, or such like, which are as impervious to air, and flat and cold, as a stale underdone pancake, should ever be spread over the sleeping child. There is more warmth in a light, porous substance than in the densest and heaviest. A blanket is not only more healthful, but much warmer, than the so-called comforter with its tough hide and thickly-packed entrails.

Cleanliness, everywhere desirable, is more especially so in the child's bedroom. No dust should be allowed to accumulate, which on the slightest agitation will float throughout the air and be inspired with each breath, and thus do infinite mischief to the delicate lungs of the young. Carpets are especially objectionable, not only as reservoirs but as causes of dirt, for they are constantly giving off at every foot-tread or movement clouds of filth composed of flocks of wool, intermingled with particles of dust. The crib or bedstead should be made so movable that its po-

sition may be readily changed, and all space and corners about it kept thoroughly clean. The mattress, pillow, and other appurtenances of the bed should be turned over, well shaken, and exposed to the sun and air on every occasion its temporary disuse will allow.

CHAPTER IX.

Sir Richard Steele on Wet-nurses.—Suckling one's own Child.—Excuses of fashionable Mothers.—Matronly Beauty.—The Wrongs of not nursing.—The immoral Effects of Mothers neglecting to nurse their Children.—The Responsibility of unnatural Mothers.—Dry-nursing.—Preparation of the Milk.—The Feeding Instruments.—Frequency of Feeding.—Regularity of Meals.—Plenty of Water.—Milk as Food.—Weaning.—Supplementary Food.—Food for Children of different Ages.—Sweets.—Teething.—Its Influence.—Too much Interference.

STEELE, who with all his recklessness of life had ever a tender sympathy with suffering, especially of the young, thus pleads in a number of the *Spectator** the cause of the infant thrust from its mother's breast:

"It is unmerciful to see that a woman endowed with all the perfections and blessings of nature can, as soon as she is delivered, turn off her innocent, tender, and helpess infant, and give it up to a woman that is (ten thousand to one) neither in health nor good condition, neither sound in mind nor body, that has neither honor nor reputation,

* No. 246.

neither love nor pity for the poor babe, but more regard for the money than for the whole child, and never will take further care of it than what by all the encouragement of money and presents she is forced to; like Æsop's Earth, which would not nurse the plant of another ground, although never so much improved, by reason that plant was not of its own production. And since another's child is no more natural to a nurse than a plant to a strange and different ground, how can it be supposed that the child should thrive? . . .

"It seems to me very unnatural that a woman that has fed a child as part of herself for nine months should have no desire to nurse it farther when brought to light and before her eyes, and when by its cry it implores her assistance and the office of a mother. Do not the very cruellest of brutes tend their young ones with all the care and delight imaginable? For how can she be called a mother that will not nurse her young ones? The earth is called the mother of all things, not because she produces, but because she maintains and nurses what she produces."

Every woman that can, should suckle her own child, and the number of those really unable to do so is but a small proportion of the many who pretend to be. No plea of a weakness, that ex-

ists not in the present but only feared in the future, by the nervous woman over-sensitive in regard to her strength, can be received in justification of the shirking of the first duty of a mother. We need only mention to repel with horror those heartless excuses urged by the frivolous woman of fashion for the abandonment of her offspring. The claims of society—that loose compound of gas-like particles, generated by the heat of artificial excitement, and held together only by the attraction of vanity — what are these, that the natural tie,* the strongest of all ties, of mother to child, should be ruptured in order to yield to them? Grace and beauty, moreover, protest against the sacrifice of their charms to the homely exigencies of nursing! The charms of the grace and beauty acknowledged by fashion, what are they? A tenuity of form and smallness of waist to which maternity seems impossible, and by which its duties are made impracticable! Æsthetics accept no such grace and beauty, and recognize their elements only in the natural subordination of means to purpose. A mother, to be graceful and beautiful, must harmonize in form and organization with her functions, have

* Even the cruel Lady Macbeth says: "I have given suck; and know how tender 'tis to love the babe that milks me."

abundance of vitality to accord with the demands upon her life-giving power, a substantial fullness of body to correspond with her quality as a source of nutriment to others. Matronly form, in all its well-defined exuberance of development, has peculiar charms as acceptable to taste as the more slender and vaguer graces of the young and unmarried woman.

A double wrong is ordinarily the consequence of a mother delegating to another her proper duty of nursing her own child. She, in tearing her infant from her breast, compels the nurse to the same cruel and unnatural act, and thus two innocent beings are made to suffer for what is only fashionable caprice in one woman, and perhaps love of money in the other. Adversity, however, may excuse the conduct of the poor nurse, but prosperity, which prompts the action, only augments the criminality of the rich mother.*

* Of 53,000 infants born in Paris in 1868, 25,000 were put out to nurse; 51 of 100 of these died!—*Bulletin de l'Académie de Médicine.*

Of 300 children born in Paris from the 1st of June, 1867, to the 1st of June, 1868, 235 were nursed at the breast, and 64 by artificial means; 25 only of the former died, 11 per cent., and 33 of the latter, 51 per cent. During the same period (June 1, 1867, to June 1, 1868), of 235 infants brought up at the breast, 181 were nursed by their own mothers; of

It is impossible to reconcile even with the lowest view of moral obligation a practice which offers a direct premium to vice, as does the fashion of wealthy women seeking for substitutes for the performance of maternal duty. Any cursory reader of the daily papers may read in prominent letters these words: "Wanted a wet-nurse. A single woman preferred." The unblushing effrontery of such announcements seem less startling when we find in the published works of an eminent English physician this emphatic declaration: "No; the best wet-nurse, if such an one can be obtained, is a young and healthy, tidy and clean servant—one who has, under the promise of marriage, been seduced by her lover."

A fearful mortality is known to prevail among those infants abandoned by their mothers for the purpose of becoming wet-nurses of the offspring of more prosperous women. For this massacre of innocents the female Herods of fashion are responsible.

The mother of opulence and luxury thinks, doubtless, that her responsibility ends with the payment of the full month's wages, and an abun-

these 15 only died, 8 per cent. Of the 54 nursed by other women than their mothers, but at the breast, 10 died, or 18 per cent.!

dant supply of vicarious infantile nourishment in the shape of beef and pudding to the nurse. She never gives a thought to the little one who has been wrenched from its natural source of life, to make way for the nursling of wealth, that it may fatten upon the other's rightful substance. She may perchance get a sight—but such sights are rare—of the nurse's child, when she will not fail to notice the contrast between its shrinking meagreness and the roundness of her own fortunate infant, expanding with its stolen nutriment. Neglect and want of proper food soon produce their natural effect, and the nurse's child, daily wasting away, finally dies, while the infant who has despoiled it of its rights strengthens constantly, and lives. Here is evidently a case of murder. Who is the criminal? We do not hesitate to mark the woman of fashion as the guilty person. She deliberately, by her habits of life, has either unfitted herself for her maternal duties or become averse to them. Conscious that she can bribe by her riches the mother of the poor to neglect her own offspring for the care of hers, she does not hesitate to assume maternal obligations, for the performance of the most wearying of which a substitute can be so readily hired. The consequence is, almost inevi-

tably, the death of the child which is deprived of its natural support. To call an act of this kind, which is constantly and deliberately repeated, a social evil, is being too mealy-mouthed. It is murder.

Though it rarely happens that a woman who has given birth to a child is incapacitated by natural causes from nursing it, there are, undoubtedly, some instances. These, however, are not so numerous but that they could easily be provided for by the, at least, equally abundant cases of poor women who have lost their own infants, and can nurse those of others without the infliction of wrong upon any one.

A wet-nurse, whatever may be the incapacity of a mother to suckle her child, is not an indispensable requirement. It may even be questioned whether, with the risks as to health, habits, and character of a strange woman, it is not better to avoid them, by bringing up by the hand, as it is called, the infant deprived, in whatever way, of the source of its natural nutriment. This process, if carefully conducted, will prove equal to the satisfaction of the full wants of infancy, and all its demands for healthful development.

The best substitute for mother's milk is that of the cow; but this, in order to adapt it for

nutriment of the infant, should be made to correspond as nearly as possible, in chemical composition, with the maternal food of which it has been deprived. This is simply done by diluting the cow's milk with an equal part of water, and adding a little salt and sugar. If practicable, a cow should be kept for the especial purpose of supplying the infant's wants, for upon the animal's food and management greatly depends the healthfulness of its milk. Under any circumstances care should be taken that the milk is always obtained from the same cow, for, after the child's digestion has once accommodated itself to the milk of one, that of another is very apt to disorder it.

The utmost care must be taken to keep the instruments, or any vessels by which the infant may be fed, perfectly clean. The least remnant of milk left, after use, will soon undergo fermentation, a process which diffuses with insidious speed its corrupting power throughout all within its reach. It is not enough to trust to the acuteness of the senses for its detection. There may be no smell or taste of sourness, and yet fermentation may be in full force. The most thorough rinsing with hot water, and subsequent drying and purification by exposure to the sun's

light, after each service, are absolutely essential to keep in a wholesome state the instruments through which the young infant receives its milk. There should be always at least two sucking-bottles, so that while one is in use the other may be undergoing the thorough process of cleansing it requires.

The infant digests quickly, and should in consequence be frequently fed.* It is well, however, to establish, as soon as possible, a certain regularity in the periods of supplying food to children, whatever may be their age. The young, though they should be made to depend mainly upon set meals for their sustenance, should nev-

* Of fifty competitors for a prize offered by a society in France for the best treatise on the subject: "The Influence of Nursing upon the Mother and Society," "a third, at least," says Dr. Siry, "held the view that infants should not be suckled oftener than every four hours during the day, and not at all during the night. I reject," he adds, "with all my might a doctrine which could reduce the maximum of the number of an infant's meals to four in twenty-four hours, and most mothers would resist any attempt to make them adopt any such limit. In the first few weeks after birth many nurses offer the breast to the child every hour, and an immense majority never allow more than two hours to elapse between two periods of giving suck. This is the interval admitted by a number of celebrated practitioners, and I agree with them."

er be refused, when evidently craving for something to eat, a morsel of bread, good ripe fruit, or some other simple article of diet. The freest supply, moreover, of good water ought always to be at the ready service of every thirsty child, and the youngest infant may ordinarily drink it without danger.

Milk should be the exclusive food of an infant until it has reached at least the age of twelve months. After this period, until the child is three years old, it ought to continue to be the staple of his sustenance, and until he reaches the adult period of life, it might constitute, with advantage, one of the principal articles of his daily food. The severing of an infant from the breast of its mother is ordinarily premature in the United States. A period of fifteen months, or even more, where there are no special reasons for shortening the time, is not too long for nursing. After the first year, supplementary food, consisting of well-baked bread and cow's milk, may be added to the maternal supply of nutriment. At the end of two years, the child may begin to partake freely of well-cooked vegetables, and eat small quantities of animal food. When he is past the age of four he can safely take his place at the table of a well-regulated

and simple household. The ordinary variety of meats, fish, and vegetables is as wholesome for the young as the advanced in years, a watchful eye always being kept upon the child lest his greediness should overpower his stomach. All pampering of the appetite with delicacies and cloying sweets is of course strictly forbidden. The child, however, ought not to be refused an occasional share of the luxuries of the table. His love for whatever is sweet seems almost instinctive, and sugar being highly nutritious, is probably, in moderate quantities, beneficial. The bit of pudding, a spoonful of ice-cream, and a plain cake or so, which appeals with such irresistible force to the youthful palate, will seldom do harm, and as they add an unmistakable flavor to the essentially animal life of childhood, are no doubt of some advantage in its economy. The rule, however, should be, to exercise the appetite in its vigor, first, upon substantial food, for sweets, though possibly fulfilling a subordinate part, can never perform the main purpose of healthful nutriment. To sate, therefore, the hunger of a child, ready and able to devour a meal of solid food, with candies, cakes, or any other unsubstantial delicacies, is to waste a power, the full and proper exercise of which is essential to health.

There is a great deal of exaggeration prevalent in regard to the influence of teething upon the child's health. The growth of a tooth is a natural process, and though often simultaneous with disease, is not by any means as frequently the cause of it as is supposed. At a certain period of infancy, all ailments are apt to be referred to the coming teeth, and this leads often to an improper interference with their development. In a healthy child there should be no cutting of the gum, and we doubt the efficacy of the operation in most of the cases of sickness in which it is performed. The *nimia diligentia*—the too great diligence, in interfering with children's health and development, is also shown in the haste with which the first or deciduous teeth are plucked out by impatient parents, in order to make way for the second or permanent ones. Nature rejects, by a process of her own, the first teeth of the young as soon as she is prepared to supply the second. The roots of the former being absorbed, they drop away to give place to their successors; and if this process is anticipated by hasty plucking of the old teeth, the new ones are thrust forward into the jaw before it has been sufficiently enlarged to receive them. Crowding follows, and irregular sets of permanent teeth are the inevitable consequence.

CHAPTER X.

Fashion of Dress *versus* the Comfort and Health of Children.—The Science of Clothing.—Dr. Franklin's Experiment.—Loose and Tight Dress.—Flannel and Woolen Garments.—Child Hardening.—Delicacy of the Skin.—Indoor and outdoor Clothing.—Freedom of Movement essential.—Expansion of the Form of the Infant.—A German Custom.—The Diaper.—Naked Infancy contrasted with the Manikins of Fashion.—Cruelty of Fashion.—An unrestraining Dress essential to Vigor and Grace.—The daily Bath.—Precautions to be taken.

While the dress of the young is fashioned so much, as it generally is, in reference to its effect on the eye of the observer, and so little as to its influence upon the comfort and health of the wearer, it will remain singularly ill-adapted to what should be its proper purpose. Science has imposed a few simple laws in regard to clothing which it is not safe to disobey. These are easily intelligible, and can be readily applied, and it behooves those who have the care of a child to understand and apply them.

The popular notion that the body receives warmth from the covering, whatsoever it may

be that is upon it, is, scientifically considered, an error. The heat of the body is of our own making, and is the result of the combustion constantly going on in us and every living animal. The only purpose of dress, apart from satisfying the demands of decency and taste, is to facilitate or prevent the escape of the natural warmth of the body. In hot weather, accordingly, much is to be got rid of, and in cold, on the contrary, retained. The former can be done by covering the body lightly with such materials as favor, and the latter by clothing it heavily with such textures as oppose, the passage of heat. The dress of summer, then, must be of thin, closely woven stuff, ordinarily of white color, and made of cotton or linen; that of winter, of a thick, loose fabric, generally black or dark-colored, and composed of silk and wool. The summer clothing will thus consist of what chemistry terms good conductors, which conduct away or carry off rapidly the heat, and the winter clothing of bad conductors, which do not do so.

Dr. Franklin spread several pieces of cloth of different colors upon the snow, exposed to the rays of the sun, and found that it melted most rapidly beneath the black, and the least so below the white; while that under the others melted

with more or less speed in proportion as they approached in tint the two extremes. He inferred, therefore, that black and dark absorbed heat more rapidly than white and light colors. It is obvious, then, that if the wearer is exposed to the rays of the sun, he will feel hotter in a black than a white dress, if its texture be the same. He will do well, therefore, to be guided by this experience, and adapt the color as well as the stuff of his garments to the variations of climate and season.

The air is one of the worst of what chemistry terms bad conductors, and consequently, a dress of loose texture and make, which incloses a great deal of it in its abundant interstices and various folds, must be warmer than a closely-woven and tight-fitting garment, which can hold but little. The loose dress, moreover, is warmer, since it admits of a free circulation, while the tight one impedes it by constricting the vessels, and thus hindering the ready flow of blood, upon which greatly depends the due heating of the body.

With a knowledge of these simple principles of the science of dress, and a willingness to act in accordance with them, the child can and will be clothed in a manner the most suitable to its health and comfort. Woolen stuffs, and especial-

ly flannel, have the combination of qualities best adapted for the protection of the young from the effects of cold. They are of that loose texture favorable to the retention by the body of its heat, and, moreover, possess the essential property of being readily cleansed by washing. Furred skins are warmer, but less suitable for bodily wear in consequence of their ready attraction and strong hold of dust and filth of all kinds.

The fashionable style of children's costume is often directly opposed to all the scientific requirements for comfort and health. Much of it seems to have been devised in accordance with a common notion that children can be hardened, as it is called, or rendered insensible by exposure, to the effects of temperature. This is a dangerous error. They who hold to it will point triumphantly, in proof of their opinion, to those ragged offspring of poverty occasionally seen who, in spite of their nakedness, seem successfully to defy the cold and the storm. These, however, are the few of the many that disease has left untouched. They are the hardy plants which remain in the wastes of misery, unwithered and undestroyed by the neglect and pestilence which have decayed and killed most of those of kindred growth.

The surface of the body can not, as is often

supposed, be hardened by continued exposure to cold or intemperate weather of any kind. The skin, when in a wholesome condition, is soft and moist, and, being constantly renewed, retains its freshness and delicacy throughout life. Its tenderness and sensibility to changes of temperature and other impressions are thus preserved. It is true that certain parts of the skin, as that in the palm of the hand of the manual worker, does thicken and become hard. This, however, is not a natural state; and if by any process the whole surface of the body was covered with a similar shell of callousness, its vitality would probably be destroyed. It is necessary for the skin to retain its porousness and moist pliability, in order to perform properly the function of transpiration which is essential to life. On some festive occasion or other, in Paris, the skin of a child was covered with gold-leaf, and he died in consequence, a few hours after, within his stiff and impervious shroud of gilt.

The inherent delicacy of the skin renders it particularly sensitive to cold and draughts of air. It, therefore, requires to be carefully protected. The low-necked, short, and sleeveless dresses, in which fond mothers delight to show off the swelling busts and rounded limbs of their dar-

lings, is a vanity which can not be indulged in with safety in all latitudes and seasons. During the severe winters of the northern districts of our country, there should be no part of the surface of the body of a child, with the exception of its face, exposed to the external air. With, however, the fiery furnaces and more than tropical heat of most of our prosperous interiors, the indoor clothing may be very light, or almost nothing, provided the temperature be uniform, and all draughts and changes of air be avoided. With the prevailing practice of overheating our houses, there is always, on going out, a danger in facing the winter's breath. To escape this, the greatest possible difference should be made between the indoor and outdoor clothing. This is obviously to be done by relying for warmth chiefly upon the cloaks and coats, furs, and such exterior garments as can be readily put on and off. If the under-clothing, or that ordinarily worn inside of the house, be too heavy, that worn on going out is apt to be too light to protect the body against the effect of the difference of temperature, a danger which is especially to be avoided.

Of course, as air and exercise are essential to the health of the young, they must face the stern winter of their native land, but it is a fatal mis-

take to suppose that either nature or habit can render them insensible to its withering breath. The best security against its ill-effects is warm clothing, which must not be cast off with any absurd idea of child-hardening.

The young should find no hinderance in dress to the freest exercise of their body and limbs, so essential to the full development of their growth and vigor. The garments should be large and loose, and no ligatures be permitted to bind with force any part of the frame. Not only will the tightening of the dress cause permanent distortion, and thus destroy grace and beauty, but will so interfere with the regular course of the blood and action of the various organs as to produce functional derangement, and finally fatal disease. The infant especially, whose tender frame yields so readily to pressure, requires to be clothed in such a manner that no part of its round and undulating form shall be prevented from moving and expanding with all the freedom of nature. The custom to which some German mothers still cling with the tenacity of national attachment to ancient traditions—that of wrapping up their infants in successive bandages, and fastening them to pillows, like martyrs bound to the stake—is admitted to be the cause

of many of those deformities which are more prevalent in their country than elsewhere. In America, fortunately for the physical beauty and health of its people, this custom does not prevail; but American infants, even, are too often much restricted in freedom of movement by the prevalent mode of dressing them.

The use of the diaper, which the nice regard of mothers to cleanliness would not readily forego, has unquestionably a tendency to deform the lower limbs of an infant, and many of the worst crooked legs are owing to it. If not entirely dispensed with, its use need not be prolonged beyond a very few months of infancy, until, in fact, the natural instincts of the child are made, as they can be easily at a very early period, to assume the form of regular habits. The diaper, moreover, when used, should be very loosely adapted to the child, so as not to bind the thigh and prevent the free action of its muscles.

The infant, whose natural heat is of a less degree in comparison with that of the adult, must be warmly dressed, and even in the hottest weather should wear flannel, in some shape or other, next to the skin. With the simple requirements of an infant, its dress needs but little artifice, and in fashion may be reduced to its ele-

mentary purpose, that of protection against the weather. The natural grace of infancy, naked and unconfined, is certainly in conformity with the laws of taste, and it is in perverse disobedience of them that the artificial make-up of a little manikin of fashion is preferred. How would the latter appear, as a substitute for the former, in the arms of a Madonna?

The rigid application of the arbitrary laws of fashion to children's dress is worse than an absurdity—it is a cruelty. It is obvious that the very young are positively indifferent to, if not absolutely unconscious of, the distinctions of costume, and that they care nothing for the cut or stuff of a smock or a vest, provided their limbs are at ease and free to bend and move. The decorum of society requires, no doubt, a certain formality of costume, but surely, without much strain upon natural modesty, the home dress, at least of the young, both male and female, might be freed from much of its usual restraints, and children allowed to run, tumble, and twist, unchecked by waistbands of whalebone, a precocious wearing of trowsers, drawers or pantalets, crinolines, and starched skirts. This would be an obvious and effective means of developing youthful muscle, and giving vigor of body as well as grace of form.

The daily bath, begun at the first moment of birth, should be continued throughout the whole life. Warm water is essential in early infancy, but its temperature may be gradually diminished with the growing strength and increasing age of the child. Drying of the body of the very young is a process requiring a good deal of attention; and lest the moisture which is sure to remain, even after the greatest care, should irritate the skin, its most tender parts ought to be dusted with powdered starch or rice flour.

CHAPTER XI.

A healthy Babe's Indication of Want of Exercise.—Crying.—Dangerous Attempts to suppress Crying.—The best Exercise for the Infant.—Artificial Contrivances.—Sympathetic Movements of Nurse and Child.—A Child's first Attempts at Locomotion.—Over-eagerness of Parents to make their Children walk.—Distortion of Limbs.—Exposure to the Air.—The proper Conditions.—The Child's Carriage.—The essentials of Exercise for Children.—Children's Susceptibility to Pleasure.—Cheerfulness of Children to be encouraged.—Animal Spirits.—Their Importance for future Happiness.—Moral Effect.—A lively Nurse desirable.—A sunny Nursery.—Amusements of the Young.—Fine Clothes *versus* healthy and happy Children.—Home and outdoor Amusements.—Excitements.—The Precocity of modern Children.—Infant Gentlemen and Ladies.—Early Development of sexual Instinct.—Early intellectual Instruction.—When to begin.—Cultivation of observing Powers.—Influence of Activity of Brain upon Body.

A HEALTHY babe is no sooner born than it indicates, by its cries, and the stretch and contraction in quick alternation of its limbs, during that which has been called its first struggle with existence, an instinctive want of exercise. Its first sense of relation with the outer world is display-

ed in a movement of its whole system, the activity of which, in a greater or less degree, is to be the established law of its future life. The vital forces show, by their promptitude to act, how essential action is to their existence. These early indications of nature are guides which should not fail to be followed by those who have charge of the infant, which, though it gives unmistakable evidence of its demands, is unable, from its natural helplessness, to satisfy them without the aid of others.

Crying is not always, as is generally supposed, an indication of infant suffering; and, though it is not advised to excite it by any cruelty, either indirectly through neglect, or directly by the infliction of pain, it is not recommended to check it by extreme measures of suppression. The probability that the cry of the infant may be only the effect of the rapid action of a new pair of lungs, eager to essay their untried powers and develop their strength, should be borne in mind. Mothers and nurses, with the reminder that the infant's cry is possibly only a healthful action, will be less ready to resort to the gin bottle, or the phial of soothing sirup, or other quieting compound, which will no doubt suppress the noisy working of the lungs, as they are sure soon-

er or later to put an effectual stop to every other process of life. The means used to allay the crying of an infant are the greatest risks it runs, for they generally depend for their power upon an opiate in some form or other, and this is always injurious to health, and frequently fatal to life.

The movement it inevitably undergoes in the course of its management, and the tossing it is subjected to in the arms of a handy and lively mother or nurse, is the best exercise for the infant. No artificial contrivances, like baby-jumpers or other labor-saving machines, are safe substitutes for the gentle handling of a woman whose nice tact enables her to adapt her every movement to the requirements of the child. The quick sympathy of the two binds them, as it were, into a common life, and each feeling of the one responds almost unconsciously to the touch of the other. Thus the action of a healthy babe and vigorous mother, animated by a mutual instinct of delighted companionship, will express itself in just such lively movements as are best for infant exercise.

As soon as the child is strong and enterprising enough to leave its nurse's arms and try its own unaided powers of locomotion, it should be al-

lowed to do so, whatever may be the form of its first awkward attempts at progress. Let it roll, tumble, and creep on the floor as it will, only taking care, of course, that it be not exposed to the dangers of a blazing fire, a red-hot stove, or precipitous staircase. Fond mothers and ambitious nurses should check their eagerness to set the baby upon its legs. With the power to walk there generally comes the inclination to do so, and the child will ordinarily make the first effort after it has learned to steady itself on its feet, by the aid of a table, chair, or some other support. Mother and nurse, therefore, need not be constantly setting up the unfledged little one, only to topple over again, like an ill-made nine-pin. This premature forcing of a child's walking powers is, apart from the obvious danger of falls, liable to distort the legs and cause deformity for life. Where there is a natural tendency to such distortion, all machines for straightening the limbs should be avoided, as by compressing the muscles tightly they interfere with their action, the freedom of which is not only essential to the general vigor, but to the removal of the local deformity.

The youngest infant can be safely exposed to the air in summer, and, when a few months old,

at all seasons, and, indeed, in almost all weathers. The greater requirements of warm clothing by the child, in consequence of its less degree of animal heat, should never be forgotten, and care be always taken that he is properly protected when sent out for the requisite daily airing. Out-of-doors as well as indoors, the arms of the nurse are the best conveyance for the infant, but its position must be changed from time to time, to prevent it acquiring any deformity. The child's carriage is a very good contrivance to facilitate a rising affection between Bridget and the policeman at the corner, but a very bad one for the interests of the baby. The child, smothered with pillows, and compressed into a fixture by layer upon layer of dress, blankets, and Afghans, lies in a state of half stupor. He utters no cry and makes no movement. The nurse, finding that the neglect of her charge can be thus continued conveniently with the progress of the Irish courtship, the baby is allowed to snore away the whole time until it is taken back home, where it arrives without having breathed a breath of pure air or moved a limb in exercise.

It is through the amusements of the young that their bodies usually receive the most effective exercise, for in these is ordinarily found

the requisite combination of physical movement with mental animation. Children are particularly susceptible to the pleasurable emotions. Their earliest recognition of the world, soon after they have been ushered into it, is a smile. Their first consciousness of a mother's tender pressure, a father's fond notice, or a little brother's or sister's sympathetic curiosity, is thus expressed. The least indication of the cheerful fills the infant with a glee which sparkles in every feature of the face, and sets in activity all his limbs. A beam of light, a tint of color, the gentlest motion or the slightest sound, will arouse all his mirthfulness; a glance from the mother's eye, a touch of the father's finger, the tinkle of a silver thimble, or the glistening of a silken shred, becomes a source of the intensest pleasure.

This early susceptibility of the child to mirth should be, we think, more encouraged than it ordinarily is. Not only would the present enjoyment of youth be thus promoted, but the future happiness of age. There is nothing so requisite for patiently enduring the trials of advanced life as abundant animal spirits, and these are only to be had by laying in a good stock during childhood. Those who are cheerful while young are seldom sad when old.

Cheerfulness, and its natural associates, mirth and laughter, are, moreover, especially favorable to health, not only of the mind but body. "A merry heart," says Solomon, "doeth good like a medicine, but sorrow drieth the bones." The moral effect, also, of cheerfulness is not to be despised. It is antagonistic to envy, strife, and all uncharitableness. The devil, said Luther, hates nothing so much as a good laugh.

As we are persuaded that cheerfulness in childhood is an excellent preparative for the labors of life, and an antidote to many of its ills, we would urge upon parents the importance of cultivating it in their offspring. Even in infancy much can be done toward encouraging the pleasurable emotions. It is above all essential that the mother, or other attendants, should sustain to their utmost, in the presence of their children, a cheerful bearing. The nurse, with the idea that age is a proof of experience and a security against carelessness, is chosen often too old to be successful in entertaining the young intrusted to her charge. Her stiff and spasmodic attempts to amuse infants are far less successful than the natural impulses of the younger attendant to sympathize with their joyousness. There is all the difference between companionship and mastery. There is

the warmth of inclination in the one, and nothing but the coldness of duty in the other.

The importance of surrounding the young with cheerful objects is seldom sufficiently recognized. How often is the nursery the dullest room in the house! It should be the most cheerful, and have, both literally and figuratively, a sunny aspect. All its contents should have a lively air.

With increasing age youth finds in the companionship of its fellows the society which is essential to its happiness, and acquires that knowledge of the traditionary games of boyhood and girlhood which are an endless source of gayety and pleasure. The top, ball, marbles, tag, leap-frog, hare and hounds, prisoner's-base, and the many other amusements of the young, with their varied inducements to active exercise of the body and enlivening influence upon the animal spirits, have a value to the child proved by the experience of all time and all countries. We regret, however, to learn that, as they involve a certain roughening and dirtying of the hands, reddening of the face, and disheveling of the hair, and an unquestionable wear and tear of fine clothes, many parents discountenance them. They are denounced by the over-refined as the games of the rude children of a rude age, and as not gen-

teel enough for the nicer offspring of modern civilization! They undoubtedly afford the young just that combination of mental excitement and physical action in which they delight, and from which both mind and body receive so much benefit. We therefore decide, without hesitation, in the case of fine clothes *versus* healthy and happy children, in favor of the healthy and happy children, leaving the fine clothes, as the lawyers say, "to be cast for damages."

Parents should not only encourage their children to play these famous old games out-of-doors, but make abundant provision for their children's amusement at home. Knowing the prejudice against cards, which, perhaps, from the bad company they are often associated with, is not very unreasonable, we do not venture to commend absolutely their use. Children, however, we must say, take, according to our experience, a greater and more constant interest in these "de'il's books," as the Scotch minister terms them, than in almost any other game, and this without the stimulus of gain. Their aspect, which is ordinarily bright and cheerful, entices the youthful eye, and the various changes and combinations the cards admit of are unceasing provocatives to their curiosity. Without cards, however, there

are draughts, chess, dominoes, and *home* billiards, to which, we believe, the most scrupulous do not now object. Parents and guardians should be careful to supply these games, and whatever else may promote innocent amusement.

In all amusements provided for children, it is important that they should be, as far as possible, of a kind as to necessitate active physical exercise in the open air. The excitements of a purely intellectual or emotional character can not be indulged in with safety by the young except to the most moderate extent. One of the prevailing faults of our day is the too rapid assimilation of youth to age. Prolonged childishness is better than a precocious development. The eagerness to make men and women of our boys and girls, leads to the production of those useless creatures who have neither innocence nor discretion, docility nor instruction, the power of growth nor the ripeness of maturity. Forced too rapidly, they have so far exhausted their vitality in acquiring the outward forms as to want the power of developing the substance of manhood and womanhood. Presuming, however, upon their semblance to maturity, they accept its gravest responsibilities, and bend and break, of course, beneath the weight.

One of the most pitiable forms of youthful precocity is that which presents itself in fashionable society as the infant gentleman or lady. This little ape is a perfect reproduction in miniature of the parent. As one dresses, so is the other dressed; as one talks, so does the other babble; as one scorns the vulgar, so the other turns up its little nose at "common" children; as one goes into society, so, of course, must the other. The little gentleman and little lady have their reunions, their dinner-parties and balls, with all their accompanying vanities, rivalries, scandalous gossip, and the unwholesome excitements of late hours, wanton dances, and irregular eating and drinking, in hot, thronged, and ill-ventilated rooms.

There is nothing that it behooves parents so completely to guard against as the too early development of the sexual instinct of the young. This often occurs in the earliest infancy, as a consequence of the excessive caressing of indiscreet attendants, and in more advanced childhood it is not an unusual result of exposing the young prematurely to the excitement of dancing-parties and other fashionable provocatives to voluptuous indulgence.

All systematic intellectual instruction of the

child should be deferred until it has reached the age of six years. Education, however, may be said to begin from the very first moment of the infant's birth. Its senses immediately make the effort to adapt themselves to the world into which it has just entered, and so throughout childhood, during every moment of its existence, it is acquiring a knowledge of external things. This natural self-instruction of the child can and should be encouraged. This may be done, without fatigue to the immature brain, by following the guide that nature points out in the more and more animated interest the growing child exhibits each day in external objects. The observing powers, then, are those which the parents should be especially careful to cultivate in their young children. This is obviously done by putting before them and directing their attention to things the form and color of which impress themselves readily upon their senses.

Those ordinarily called intellectual phenomena, whose brains have been stimulated into a precocious vitality at the expense of the strength of all the rest of the body, are not desirable productions, and, fortunately, not easy to create. That early mental precocity which is generally found in combination with physical weakness, is

oftener the effect than the cause of the latter, and we doubt whether many serious diseases either among the young or the old have been due to the direct influence upon the body of the exercise of the brain.

Mischief, certainly, and serious mischief too, is done by neglecting to associate with the means for cultivating the intellect the requirements essential for the preservation of health and the development of physical vigor. Such a neglect, however, must equally affect the stupid and the intelligent, and therefore it is not reasonable to attribute the consequences of a want of pure air and bodily exercise to an excessive working of the brain. If long confinement in unwholesome places and painful constraint could be avoided in the course of teaching, the very young might safely receive all the intellectual instruction of which they are capable. We are quite persuaded that the exercise of the brain, with a proper regard to the requirements of the laws of health, is favorable to physical as well as mental vigor. Intellectual inactivity is more to be feared than the reverse.

CHAPTER XII.

Facility of Sleep.—Carelessness in regard to best Means of securing healthful Sleep.—The physiological Conditions essential.—The Bedroom.—Effect of Noise.—A Story.—Quiet a Disturber of Sleep.—Best Position for Bedroom.—Flimsiness of modern Houses.—Indoor and outdoor Noises.—Remedy for.—Sleep and Stupor.—Ventilation of Bedroom.—*Maximum* and *Minimum* of Space.—Open Windows.—Night Air.—Furniture of Bedroom.—The Bed.—Position of the Bed.—Bed-clothes.—Their Philosophy.—Impervious Coverlets.—*Edredon.*—When to make the Bed.—Window-curtains.—Carpets and Rugs.—Pictures.

THAT blessed sleep, which, as Sancho Panza says, covers a man all over, body and mind, like a cloak, is indeed a merciful dispensation, which comes to most betimes, wherever they may be. The man with the healthy mind in the healthy body seldom fails to find the repose at night which is the appointed refreshment after his daily work. He may stretch his weary frame on the bare ground or scanty straw, in the close dungeon or the open air, and sleep will shed its benign influence over him. The famished Lazarus even will slumber, insensible to hunger, and

feast, perchance, in his dreams by the side of Dives; and the conscience of the guilty wretch has often failed to arouse his somnolence on the very eve of his execution, and within sound of the rising gallows.

This facility of sleep makes many people less regardful than they should be of the means necessary to secure its best effects as to health and comfort. There are undoubtedly some exceptionally vigorous people who will sleep soundly, and awaken apparently thoroughly refreshed, under circumstances ordinarily favorable neither to repose nor reinvigoration. Uninterrupted insensibility, however, is very apt to be mistaken for healthful slumber, and many a night is thus passed in a condition more akin to stupor than sleep. A close room and a charcoal-burner will secure for the most restless and insomnolent the profoundest repose, even that of death.

Sleep, however sound, can not be healthful without those conditions which physiology proves to be essential to the proper action of the functions of life, whether in full or partial operation; for in slumber, it must be recollected, there is not cessation, but merely diminution, of vitality. The brain, the nerves, the lungs, the heart, the digestive apparatus, the muscles, and, in fact, all

parts of the animal system, work by night as well as by day, though, indeed, with greatly diminished activity. The body, therefore, is subject to the same physiological laws in sleep as in wakefulness, and it is fatal to attempt to withdraw it from their control.

Most people are supposed to be provided with a place called a bedroom or bed-chamber to sleep in, and it is essential for health and comfort that this should be properly adapted to the purpose. Stillness is generally a requisite for sleep, yet such is the influence of habit and custom that noise becomes occasionally necessary. We know the story of the new tenant of a house prosecuting as a nuisance a neighboring tin-shop, the persevering industry of the proprietor of which led him to begin before the day and prolong far into the night the characteristic din of his trade, and thus murder all sleep. With the proverbial delay of the law, the case, though finally decided in favor of the plaintiff, was so protracted that he had in the mean time become accustomed to the noise, and found, on its being put an end to, that with the gain of his suit he had lost his repose, and was fain to solicit his old tormentor to bring back his shop that he might be soothed to sleep by its tumultuous lullaby. Every traveler is kept con-

scious, at the beginning of his voyage in a steamer, of its noisy discomfort during many an hour of the night, made wakeful by the constant thuds of screw or paddle and the tremor of the engine; but long before the end of his journey they become, from habit, necessary to his repose, and nothing is so sure to rouse him from the deepest slumber as the sudden cessation of these sounds when he awakes in an agony of horrible stillness.

Quiet, however, is ordinarily essential to sleep; and where there can be a choice, the bed-chamber should be situated as remotely as possible from all the usual noises of the house. While it should be of easy approach, it ought not to be too near the common thoroughfare of hall, staircase, or corridor, where there must necessarily be a more or less constant tramping of feet, hum of voices, and other sounds in the course of household life. There are always some—as servants, for example—who have to go to bed later and rise earlier than others; and the most discreet of these can not be always relied upon for a careful consideration of the comfort of those inclined to sleep.

Modern houses are apt to be built in such a flimsy manner that the floors and walls hardly, as regards noise, separate adjoining dwellings

and their various compartments from each other. Every neighbor is heard, if not seen, and one is forced, whatever may be his humor or necessity for quiet, to share in every tumultuous demonstration of the life which surrounds him. His nerves are made to thrill in painful response to each labored tinkle of the piano; his tranquillity is jarred by every burst of noisy laughter, and his attention distracted by the hum of continuous chatter in the house next door. In his own dwelling, not a foot falls but he hears it, and each step sends a vibration from the garret to the basement. The mere opening of a window or the shutting of a door startles the quietude of the most remote inhabitant, with a sound as of some terrible catastrophe. From the confused rattle of outdoor city life there is not in the innermost precincts of the dwelling a secure retreat; and a man's ears must ring with the blasts of every passing band, the galloping of horses, and the clattering of carriages and uneasy wagons, or be pierced by shrill street-cries and shattered by the heavy thumps of unloading carts.

The remedy for these annoyances must be sought for in a more solid construction of modern houses. In the mean time, if, in spite of ears

stuffed with cotton, floors covered with layers of felt, and closed windows and doors, the noise from without continues, as it probably will, to penetrate within, there is no other alternative than that philosophical endurance which teaches us to submit as patiently as possible to what can not be cured. An indifference to such annoyances, however provoking at first, can be cultivated with considerable success. This is to be mainly done by accepting them as among the inevitable ills of life, and resolutely adapting the patience to their infliction, until the sufferance of it becomes habitual, and consequently less difficult.

Though the want of pure air is favorable to stupor, an abundant supply of it is requisite for healthful sleep. It is particularly desirable, therefore, that the bed-chamber should be spacious and well ventilated. It has been estimated that three thousand cubic feet is the smallest breathing-space to be allowed to two occupants of a bedroom, which should thus have the dimensions of twenty feet in length, fifteen feet in width, and ten feet in height. This, then, is the *minimum* to which contraction is permissible. The *maximum* may be extended almost as far as the command of space will allow. Large

sleeping apartments are undoubtedly very favorable to health. The desire for free respiration during slumber leads many people to secure an abundant supply of fresh air by leaving a window communicating with the atmosphere without open during the night at all seasons. This —the very thought of which will send a chill of dread and imaginary cold all over our furnace-baked dames, and which might, if they tried it in reality, shiver them to destruction, as the gentlest puff of pure air will an overheated glass— is, notwithstanding, a practice, as is proved by the experience of many a vigorous veteran, favorable to health and long life. If there should happen to be a second room communicating with the bed-chamber, it would be well that it at least should have a window opened during the whole night. Of course draughts are to be avoided; but if these are prevented by a proper arrangement and opening of the doors and windows in relation to each other, almost any degree of cold in the bedroom will be safe while the sleeper is warmly nestled beneath his blankets.

"Another extraordinary fallacy," exclaims Miss Nightingale, and her well-tried and intelligent experience entitles her to speak emphatically, "is the dread of night air. What air can we breathe

at night but night air? The choice is between pure night air from without, and foul night air from within. Most people prefer the latter. An unaccountable choice. What will they say if it is proved to be true that fully one-half of all the disease we suffer from is occasioned by people sleeping with their windows shut? An open window most nights in the year can never hurt any one. In great cities, night air is often the best and purest air to be had in the twenty-four hours."

It seems almost a natural impulse for every one rising in the morning to refresh himself with the pure air of the early day, and most people are hardly up before they throw the windows of their bedrooms wide open. The vigorous can indulge in this practice not only with safety, but benefit; and even the weakly, provided that they take care, by proper covering, to avoid too great and sudden a change, may expose themselves in most climates and seasons to the freshness of the outward air with impunity. At any rate, the windows should be opened just as the occupant of the bedroom is about to leave, and left so for most of the day.

The principal piece of the furniture of a bedroom is, of course, the bed. We in the United

States, with our practical good sense, have long since discarded the old four-poster, as it was termed, with its ponderous immobility and heavy hangings of stuff of divers kinds, so absorbent of impurities and attractive of deposits of dust, "slut's wool," and other dirt. The bedstead should be kept free of all curtains and incumbrances for show. It ought to be made so movable by lightness, or casters attached to its feet, that its position can be easily changed for the convenience of sleeper or maker of the bed, and the ready removal of dust, so apt to accumulate under and about it. Feather-beds we regard as obsolete, and we doubt if even a surviving grandmother can be found to favor them. The ordinary spring mattresses of hair, superimposed on paillasses of straw or corn-shucks, are the most healthful to lie upon. The best position for the bed is with its head to the wall, so that either side may be left free for the access of air and the bed-maker.

The bed-clothes, like those of daily wear, are heated by the body, and not the body by them. They act merely by preventing the escape of heat generated by the living person. Warmth, then, is best secured by such bed-coverings as are bad conductors; and those are the worst conductors

which have, in consequence of their texture, the greatest capacity for air. Wool, which, within its loose and porous structure, always contains a large supply of air, is the material best adapted for keeping the body warm in bed. Fleecy woolen blankets are the most suitable coverings in every respect. They are not only warm, but their warmth is of a healthy kind—since, from their lightness, they do not weigh heavily upon the body, and interfere by pressure with the free action of its functions; and their porousness permits the evaporation of its natural moisture. Impervious coverlets and bed-comforters, as they are miscalled, stuffed and stitched solid with cotton, are not only poor protectors of the warmth, but disturbers of the ease and natural action of the sleeping body.

The *édredon*, judiciously used, is a comfortable appendage to the bed in the rigid winter weather, especially for the aged and weakly, liable to suffer from excessive coldness of the legs and feet. The floating eider-down, of which it is ordinarily made, forms the warmest of all envelopes, and is so light that its weight is imperceptible. The *édredon* should be used merely, however, as a partial means of warmth, and to cover only the lower extremities. The bed must not be made until an hour or more

after its incumbent of the night has left it, and its internal surfaces have, by a due scattering and turning of its contents, been well exposed to the fresh air and clear daylight from the open windows. A sunny exposure we regard as advantageous to every room, whether used by day or night. As this, however, is not always practicable, it can be dispensed with better in the bedchamber than elsewhere, as darkness is an essential requisite of the nocturnal abode. Heavy window-curtains, however, are objectionable for the same reason as weighty bed-hangings. An easily movable shade, just sufficient to temper the too intrusive light of dawn or glimmering of the moon, is better than thick drapery of any kind, barred shutters, or close blinds.

Modern luxury insists upon the carpet, but not wisely, as we think. Painted or inlaid floors of wood, with rugs, are, according to our taste, more becoming, and certainly more healthful. A permanently laid woolen covering to the floor must necessarily absorb and retain much dust and other impurity. A rug, on the other hand, removable each day, can be kept free from uncleanness of all kinds. None but the necessary articles of the toilet, etc., should be admitted into the bedroom, so that there may be left the

freest scope for the air and the broom. The bed-chamber utensil ought not, if possible, to be used during the day; and when so, immediately emptied, and scalded with hot water, of which a little should be left in. No slops, dirty linen, or clothes-basket should be retained in a sleeping apartment. Painted or frescoed walls are preferable, for health's sake, to paper-hangings. The decorations need not be very numerous or elaborate, as the bedroom is meant to sleep, and not to lie awake in. There should be a few choice engravings—as, for example, of the sacred pictures of Raphael, which, if we do not all revere as symbols of piety, no one refuses to admire as ideals of chaste beauty. Every eye closing or waking upon the sanctified manliness of saint and apostle, purified maternity of Virgin, and holy innocence of Child, must receive visions of beatitude for which the dreams of the night will be sweeter and the aspirations of the day nobler.

CHAPTER XIII.

Quantity of Sleep required.—Sleeplessness self-incurred.—Pure Air, and Abundance of it.—No personal Clothing required.—The Night-dress.—Freedom from Constraint essential to Sleep.—Position of the Body.—Right or left Side?—Turning to the Window.—Pillow.—The Effects of a hard and narrow Pillow.—Nightmare.—Snoring.—Late Suppers.—Miss Martineau on Brandy-and-water before going to bed.—Requirements of weak-toned People.—Tea and Coffee drinking.—The last Cigar.—Late Studies.—Business Anxieties.—The daily Bath.—A good Soporific.—Danger of Opiates.—Early Rising.—The second Sleep.—Putting on and putting off the Clothes.—A tropical Practice.—Cleanliness of Clothing.—Dirt and Cold.—Adaptation of Dress according to Chemistry.—Summer and winter Apparel.—Effect of Moisture upon Clothes.—The Advantage of woolen Garments.

EIGHT hours out of the twenty-four of each day are required by most healthy adults for sleep, and this quantity they seldom fail to get. With the exception of those accidental disturbances to repose, such as sudden alarms, surprises, and extraordinary exigencies of life or business, there is no other cause to deprive a healthy man of his full proportion of sleep than what can be

attributed to his own ignorance or perversity. If a man who is otherwise well suffers from sleeplessness, he may be sure that it is within his power to remedy it, as it will be found to be produced by a defect of diet, regimen, or habit, or by some circumstance of life under his control.

After a full exposition of the requirements of the bedroom for comfortable and healthful slumber, it is not necessary now to insist particularly upon the external wants of the human body during sleep. It is hoped that it has been made sufficiently clear to the reader that pure air, and abundance of it, are as essential to the sleeping as to the wakeful man, and that the bed-coverings, which are merely the nocturnal clothing, are to be regulated according to the same chemical laws as should govern the adaptation of the daily dress to the wearer.

As far as comfort is concerned, there is no need of any personal clothing at all in bed, which, if properly made, and adapted to the requirements of the body, will supply it, even in its nakedness, with all that it demands for warmth as well as health. For propriety's sake, however, a dress of some kind is ordinarily worn. This should never consist of any portion of the coverings of daily wear. The shirt, the drawers, the stock-

ings, and even the bodily vest of flannel, should be cast off on going to bed, and a single fresh garment put on. The night-gown should be made long and full, and fashioned in such a manner that none of its parts can be so drawn as to constrict the body in the least during its movements in the insensibility of sleep. There should be no wristbands, in the ordinary sense, but the sleeves should be of great and nearly uniform width. The neck should be spacious, and not closed by buttons, and the bosom left free to open. The wearing of stockings, as is not uncommon, during sleep, is a pernicious practice. In fact, the body should be unhampered by any tight-fitting garment, and freed from all ties and ligatures, as, in its prostrate and comparatively inactive condition during slumber, its organs and circulation are rendered very liable to be deranged by the slightest pressure or constriction.

The position of the body has much to do with the soundness and refreshment of sleep. In reclining, the sleeper should lie upon his left side, a habit of doing which may be easily acquired. In this position the heart, which is movable, remains more readily in its natural place, while, if the body lies on the right, this organ is shifted, and, compressing the lungs, interferes with the

freedom of breathing. The bed should be so situated that, while the sleeper lies on his left side, he will also be turned toward the windows; for it seems a natural instinct, even in sleep, to seek the source of light.

A sufficient breadth of pillow, so that it may support the shoulders as well as the head, will greatly aid in giving the body, in sleep, its proper position. A hard and narrow pillow disposes a reclining person to lie on his back, which is the worst position he can take for comfortable and healthful repose. The back part of his head, moreover, hangs, as it were, on the ledge of its narrow support, and being thus compressed, the circulation of the blood is deranged in that part of the brain upon which the respiratory and other animal functions depend. These are accordingly ill-performed, and many of those familiar phenomena of disordered sleep ensue, such as nightmare, with its horrors, frightful dreams, startings, difficulty of breathing, and that sonorous respiration known as snoring—a fertile source of domestic disquietude, which disturbs the repose of every one within its hearing, and often, much to the satisfaction of his vexed neighbor, awakens the sleeper himself.

The practice of taking food and drink a short

time before retiring to bed, although not always commendable, is occasionally favorable to sleep. Robust people, with a tendency to fullness of habit, should certainly avoid taking what is called a late supper; but there are many persons, of a more delicate organization and weaker tone, though not in ill health, who have a greater inclination to sound slumber after taking a meal than on going to bed with an entirely empty stomach. Miss Martineau, after suffering a long time from nervous wakefulness, and trying, as she tells us, in vain all the soporifics of the pharmacopœia, found in a glass of brandy-and-water, recommended by some unprofessional adviser to be drunk at bed-time, a specific which restored to her her full modicum of refreshing sleep. Nervous people, liable to sleeplessness, would be undoubtedly benefited by taking a little light food just before going to bed; and some weak wine, or stronger stimulant well diluted, might be occasionally added with good effect.

Late tea and coffee drinking, as well the last cigar, which the habitual smoker, at the very moment of going to bed, generally adds to the large sum of his day's consumption, are apt to be great disturbers of the night's rest.

The business of the day allowed to prolong its

exciting hopes and worrying anxieties into the late hours of the night, studies pursued, and emotional reading of all varieties indulged in to the last moment before going to bed, so vex and agitate the mind, that it will rarely permit to the most fatigued body its necessary repose.

The daily bath, which, it need hardly be said, is a requisite for comfort and health, may be used advantageously as a promoter of sleep. During hot weather, the rapid sponging of the whole body with cold water, just before going to bed, is an excellent soporific; and in winter the tepid bath will be hardly less effectual.

Drugs of all kinds, and especially the opiates, should never be tasted by people in health, and even when ill, only under the specific direction, each time, of some skillful and discreet physician.

The benefits of early rising have been greatly exaggerated. People who go to bed late must rise late, if they are to obtain the full modicum of sleep requisite for health. When this, however, is secured, there should be no lingering abed, as the second sleep, as it is termed, is an indulgence in an indolent practice, and not the satisfaction of a natural want, and is undoubtedly both weakening and stupefying. The moral and physical advantages to children of early rising

are admitted, but we doubt whether it is as essential to the health and length of life of grown-up people as many have claimed it to be.

The human clothing is naturally associated with the bedroom in which it is generally put on and taken off. These processes, simple as they may be, require, for health's sake, some little attention. A practice prevails in tropical countries of shaking thoroughly every article of apparel just before it is placed on the body. The motive which prompts this comes from the fear lest a centipede or other lively and virulent specimen of natural history has hid itself somewhere within the folds of the garment. Even without the danger of wearing one's shirt in conjunction with such an intruder, it is an excellent practice to shake it and every other article of clothing thoroughly before putting them on. They are thus rid of dust, and well aired—processes which every one who has not a valet to do for him should do for himself.

Nice people need not be told of the necessity of a frequent change of clothing; but those who are not so should be reminded that a continuous wear of the same dress is not only uncleanly, but unfavorable to comfort and health. The undergarments worn next to the skin, as they absorb

the noxious secretions of the body, should be, whatever may be their texture, frequently washed, and the outer changed from time to time, to allow of a lengthened purification by shaking and an exposure to air. Cleansing of a garment, apart from its being a decorous concession to propriety, has the effect of keeping the interstices of the material of which it may be made free for the admission of air, so essential to the protection of the warmth of the body. The flocculent texture of woolen cloth especially, if not often stirred by shaking and beating, or ruffled by the bristles of a brush, will become so matted together by the constant pressure of use, as to lose its peculiar adaptation to this purpose. The thickest winter coat, however warm when new and clean, may thus become, when old and allowed to get dirty from neglect, not only an unseemly, but a very cold garment.

Bearing in mind the chemical division of substances into good and bad conductors of heat, and the fact that the artificial coverings of the body have no other effect than to keep in or let out the natural warmth of the body, there can be no difficulty in adapting the dress, in all seasons, to the requirements of health and comfort.

Apparel of summer wear should be composed

of material that conducts heat rapidly; and that of winter, of such as conducts it slowly. The greater or less power of conduction of all substances that are practically available for clothing the human body depends, it will be recollected, upon their capacity for air. Those which hold the most of this worst of all conductors of heat become, in consequence, bad conductors themselves; and those which have the least capacity for it are necessarily good ones. Thick and loose textures are obviously better holders of air, and consequently poorer conductors, than thin and close ones. The garment of wool, therefore, will keep in the bodily heat better, and of course feel warmer, than that of linen. The capacity of dress for air, it is clear, will be increased by a multiplicity of layers and looseness of fit, while it will be diminished by tightness. The inference, then, is obvious, that the warmth of the body is best secured by clothes that are easy and composed of successive folds. In the winter a person does well to pile loose coat upon loose coat, when exposed to severe cold without the opportunity of active bodily exercise.

Moisture increases the conducting power of all clothing, inasmuch as, driving out the air, it takes its place in the interstices of the material of which

it may be composed. Wool absorbs moisture with less rapidity than linen, and its conducting power is not so much increased by it. Whatever, therefore, may be the season of the year and the temperature, a woolen dress, when exposure to wet is inevitable, is safer to wear than that of any other material; for the heat of the body is less likely to be suddenly checked—an occurrence always dangerous to health, and frequently fatal to life.

CHAPTER XIV.

The Savage surprised by the civilized Dinner.—Barbarous and refined Eating contrasted.—Banqueting-halls.—Scott's Description in "Ivanhoe."—The Banqueting-hall.—Its Connection with social Enjoyments.—The English Squire in Relation to his Mahogany.—Dining-room subordinate to the Drawing-room.—Modern Refinement.—The modern Tendency.—The English Dining-room.—An English Dinner.—Washington Irving at an English Table.—Furniture of English Dining-room.—Continental and English Dining-rooms contrasted.—The essential Furniture of a Dining-room.—Æsthetic and Dietetic.—Engravings for a Dining-room.—Requisites for the Dining-room.

A SAVAGE suddenly introduced among civilized people is surprised by nothing so much as their complicated methods of satisfying hunger and thirst. He, plucking the mussel from the rock, shooting the bird in the air, or piercing the wild beast in the wood, with his ever-ready arrow and spear, as chance may offer, supplies his wants with hardly more deliberation than the animal upon which he preys. Tearing the still quivering flesh with tooth and nail, he gorges himself with it without regard to condition, time, place,

or order. His appetite rather waits upon the food than the food upon his appetite, and he feeds when, how, and wherever he can. No wonder, then, that the savage, when he is first brought to contemplate the dinner of civilization, is struck with astonishment; and he may well be, for it is a marvel of ingenious art and complicated formality.

Think of the preliminary discussion and preparation; the varied meats, condiments, wines, and delicacies gathered from the four quarters of the globe; the complicated artifices of cookery; the ingenious provocatives to appetite; the services of porcelain, crystal, plate, and fine linen; the order, precision, and gravity of the ceremonials, which are essential to the modern dinner as perfected by the luxurious! What a contrast this presents to the simple food and manner of eating of the natural man! How many luxuries and ceremonies are superimposed upon the mere necessaries and instinctive actions of life!

With the growing refinement in eating it came to be associated with social enjoyment and hospitality, and a part of the dwelling was appropriated exclusively for the purpose. The banqueting-hall was, in the earlier days of civilization, the largest and most adorned apartment of the

house. "First, therefore, I say," declares Lord Bacon, "you can not have a perfect palace except you have two several sides—a side for the banquet, as is spoken of in the book of Esther, and a side for the household; the one for feasts and triumphs, and the other for dwelling."

The early Saxon thanes, though their mansions were rude and unimposing in comparison with the tall, turreted, and castellated buildings of their Norman conquerors, prided themselves upon having great banqueting-halls, where, in accordance with their titles of "Dividers of Bread," they dispensed their generous hospitality. Scott's description in "Ivanhoe," though heightened by his own imagination, gives, probably, a tolerably just historic idea of such structures. They were evidently as grand and luxurious as the rude art and narrow resources of those earlier days admitted. Though the floor of Cedric the Saxon's hall was of earth mixed with lime, such as is often employed in the modern barn, there was the dais, with its canopy and coverings of scarlet cloth, its chairs and settles of carved oak, and footstools "curiously carved and inlaid with ivory."

The banqueting-hall became, indeed, in the earlier times of the civilization of our race, the main

apartment of the house, as eating and drinking were, in fact, the chief sources of social enjoyment and entertainment. The old English squire continued to a late day the traditionary importance of the dining-room given to it by his Saxon ancestors; and what time he was not in the stables, or galloping like mad at the heels of a fox, he spent with his boon companions, gorging himself with meat and drink at the table, or lying drunk under it. It is only within the memory of living men that the dining-room has become subordinate to the parlor, or drawing-room.

A better knowledge of the laws of health increased general culture; and a higher appreciation of woman have led men to prefer the equable animation of temperance, and the refinement of conversation, literature, the fine arts, and female society, to the grossness of sensual indulgence, the spasmodic excitement of wine, and the brutish association of fellow-debauchees. Thus cultivated people of our day seldom linger any longer in their dining-rooms than is necessary to eat and drink sufficiently and decorously, but withdraw themselves as soon as possible from the confused remains and satiating odors of the feast to the inviting freshness and tasteful order of the parlor.

The change which has led to the comparative degradation of the dining-room has been unquestionably of benefit to the taste and manners of society. There is, however, a tendency in another direction—namely, to turn the parlor, or drawing-room, into a mere place for the show of tawdry upholstery, or the reception of a set of heartless people known as the fashionable. This is fast converting the ancient virtue of hospitality into a mere display of cost and formality of entertainment, from which neither he who gives nor he who receives derives any benefit. There is surely, without recurring to the gluttony and intemperate drinking of the dining-room of old, a sufficient motive for mutual intercourse. If the maudlin freedom of drunkenness, or the costly formality of the fashionable party, is essential to society, then man does not surely deserve to be called a social animal, but only a groveling brute or a painted lay figure.

The English dining-room is a sombre place, in harmony with the seriousness of the ordinary English dinner. Heavy curtains of dark stuff shut out all distraction from without, that neither the light of day nor the brightness of nature may interfere with the solemn ceremony within. The night is awaited, that no unfinished labor or press of business may disturb and hasten the crowning

work of an Englishman's daily life. The candles are lighted, the dinner is announced, the host and hostess marshal in the guests, dressed in prim correctness of attire, and ranked in order with the precision of the Heralds' College. Hardly a word is spoken, and not a footfall heard on the thickly-carpeted floor. The solid mahogany of the table and sideboard is weighted with heavy plate. A demure butler in suit of black, and stolid footmen, move about with the stillness of mutes at a funeral, and, watching each longing mouth of the guests, who give hardly any other indication of vitality, keep them diligently supplied with food and drink for the successive courses of the protracted dinner. Long intervals of half-somnolence intervene, during which a few drawling words whispered from neighbor to neighbor serve to sustain the expectation of the less patient for the coming roast, or what not. Sitting far into the night, and gorged with great cuts from monstrous barons of beef, and deep potations of somniferous port, the company at an English dinner are not, of course, of the liveliest humor. A studied compliment or a set speech may, however, be occasionally uttered by an old gallant or an aspiring young orator, capable of a spasmodic effort in spite of the general oppressiveness. Washington Irving, who had to

pay for his English fame by a compliance with English customs, is said to have slept habitually at these dull symposia.

The furniture of the English dining-room is as characteristic as the place itself. The sideboard and table are of dark mahogany of the heaviest build, with broad surfaces and coarse moldings. The chairs are no less in harmony. Being wide-backed, stuffed with hair, and covered with leather, they are suggestive of long sittings and sleepy tranquillity.

The dining-room generally on the continent of Europe is a great contrast to that of England. The room is airy and light, as is appropriate to early and cheerful repasts, has inlaid and painted floors, slightly shaded windows, often trellised with flowing vines, and a look-out into a garden or cheerful court-yard. The table and the cool and easily-movable chairs form the principal part of the furniture. The walls are either frescoed or tastefully papered, and the ordinary grossness of a table loaded with heavy joints of meat and great smoking heaps of boiled potatoes is avoided by cutting and serving these at a side-table, or in an adjacent room, and substituting in their place, upon the spread, flowers and fruit and ornaments of confectionery.

All really essential to a dining-room are a sol-

id extension-table of oak or walnut, a small sideboard of either material, a proper number of cane-bottomed chairs, and a stand for the convenience of the waiter while serving. The floor should never be carpeted, but inlaid or painted, and the hangings of the windows should be of a kind to serve merely as shades in case of necessity, and never of heavy drapery, which is sure to hinder ventilation, and reek with all the odors of the smoking-hot dinner. Some neutral color, of not too dark a tone, should adorn the walls; and their uniformity may be broken by cheerful pictures or prints. A friend of ours, who made an art classification of his own into the æsthetic and dietetic, and including Kaulbach's drawing of Lotta cutting the loaf, and the engraving of Rembrandt's jollification with his bride, among the latter, hung them both up, as we think not inappropriately, in his dining-room. The chief requisites for the place in which the daily repasts are taken are conveniency, brightness, neatness, and cleanliness; and these are more likely to be secured, with their accompanying moral influences, by the simple construction and arrangement of the French and German dining-room, than of the English, with all its elaborate artifices and evil inducements to long sitting and excessive indulgence.

CHAPTER XV.

Too great Consciousness of a Stomach.—The Necessity of a Habit of good Living.—The necessary Number of Meals.—Time of Meals.—Interval between the Meals.—The Breakfast.—When required.—Composition of the Breakfast.—The Dinner.—Time for Dinner.—The Luncheon.—Its Influence on Health and Morals.—What constitutes a good Luncheon.—The Seriousness of Dinner.—Soup.—Fish.—Roast.—Necessity of Variety.—Large Joints.—Rehashes.—Vegetables.—Potatoes.—The Pudding.—Pastry.—Dessert.

It has been said that a man should not be conscious of his possession of a stomach; not that every one ought to be so ignorant of the anatomy of his frame as not to know that this important organ is an essential part of his organization. On the contrary, the anatomical structure and physiological action of his whole body should be familiar to each human being, that the conduct of his life may be guided by the laws which are only to be understood through such a familiarity. His knowledge of these laws, so far from inducing him to acquire an increased consciousness of the

existence of his own stomach, will, by showing the danger, deter him from such a proceeding.

There is no better established law of physiology than that the habit of concentrating the attention of the mind upon the action of any organ of the body is fatal to the proper performance of its functions. The stomach is peculiarly sensible to this mental watchfulness, and, like a shy pupil, always blunders in its work when under the too close supervision of its master. There is more harm done to the stomach by the over-anxious, with their constant fear of injuring it, than by the reckless with all their audacious disregard of danger. Many a person has spoiled his digestion by the very means he has striven to keep it in good condition. On the other hand, there are not a few who, having done apparently their best to destroy, have succeeded in preserving it unimpaired. It must not be inferred, however, that recklessness in eating and drinking is more favorable to health than prudence. Physiology commands us to obey certain laws of diet and regimen, and indicates the manner of obedience. It is essential to comply with both.

The daily food and drink of every person should be in accordance with the well-known principles of healthful diet. The habit should be

established, and never swerved from, of living properly, so that no one, as he takes his seat at the table and prepares to satisfy his appetite, need be distracted from the fullness of its enjoyment by any vexatious questions. He should not be forced to set up a debate in his own mind as to the digestibility of every bit of bread he breaks, or of each plate of meat set before him. It matters not how wholesome may be the article of diet, no stomach will digest it easily if its operations are disturbed by distracting doubts of their efficiency. Physiology has a ready explanation of this undoubted fact. Mental anxiety of all kinds weakens the nervous power, and, while lowering the general tone of the body, diminishes especially the power of digestion. The brain, moreover, is at the same time inordinately active, and reserves the force of nervous energy, and draws the blood to itself at the very moment the stomach chiefly requires its full supply of both. The easy, unquestioning consumer of his food is the most likely to digest it well.

The meals of a properly-regulated domestic household ordinarily offer the conditions essential to a healthful diet. The breakfast, dinner, and tea, or supper, are the three usual daily repasts; and these are as many as are required by

most people. Infants and children should be more frequently fed, as they digest with greater rapidity, and demand, in consequence of growth and development, a larger supply of food in proportion to their age. An adult, under the ordinary circumstances of prosperous life in the United States, should be satisfied with three daily meals. These, if properly constituted, will not only be ample for substantial nourishment, but will be more conducive to good digestion and vigorous health than a greater number.

The appointed time for the meals may vary according to circumstances, but the intervals between them should be of uniform length. Five or six hours, at most, ought to be allowed to intervene between two repasts. If this rule be strictly followed, it will matter very little at what particular hour each daily meal is eaten. The late riser will, of course, take his first food of the day late, and so demand each successive supply, if he has a regard for the proper length of interval, at late hours. Early risers, on the contrary, beginning early, will continue to be early feeders throughout the day.

After the long fast of the night, a healthy person is eager for food as soon as he awakes in the morning. He should, therefore, wait no longer

for his breakfast than during the time necessary to perform his ablutions and perfect his toilet. The activity required for these simple operations affords quite sufficient exercise for most people, before taking their first meal. The brisk constitutional walk—as it is termed—on an empty stomach, at break of day, is of no advantage to any one. The most vigorous may possibly endure, but the less robust will be sure to suffer from it.

The breakfast need never be a very elaborate meal. The morning appetite, however eager, has so much the unsophisticated character of natural hunger, that it craves for simple food. A slice or two of bread and a good draught of boiled milk, with a few spoonfuls of coffee to flavor it, constitute the first repast of continental Europe, and content, apparently, a robust and very active population until dinner-time. The breakfast should be always composed of light and easily-digested food. A little coffee and a great deal of milk, with a free supply of well-baked bread, or such substitutes for it as hominy, oatmeal porridge, or other articles of a farinaceous kind, are all that are required for the most vigorous people.

A too solid meat diet at the beginning of the

day is a bad preparative for the early morning activity of the busy American. An egg or two, a rasher of bacon, or a small slice of cold meat, may be indulged in; but the hot steaks and chops, especially if they are improperly cooked, as they are apt to be at all times, and especially in the haste of an early breakfast, had better be kept for a later and more deliberate meal.

The chief repast of the day—the dinner—is ordinarily taken, by people of simple habits, next in succession to the breakfast. If the first meal is eaten at seven or eight o'clock, the second should be at half-past twelve or half-past one. The more fashionable and luxurious livers generally dine, in this country, at five, six, or even seven o'clock. If the dinner is thus postponed to a late hour in the evening, a luncheon—or something, at any rate, to eat—must be taken in the middle of the day. There is more mischief done to the stomach and the power of digestion during this interval between the early breakfast and late dinner than at any other part of daily life. In the excitement of business, the luncheon is either neglected altogether, taken at irregular periods, or devoured with inordinate haste. Long abstinence from solid food, which is so easy to a preoccupied mind, and therefore frequently practiced,

is exceedingly dangerous. Most of the vital powers are forced into an excessive activity, while the one which supplies the sustenance upon which the strength and existence of all depend is allowed to remain idle, and thus prevented from performing its indispensable functions. It is an illustration of the old fable of the members rebelling against the belly, with the moral unchanged.

The irregularity of the business man's luncheon is another serious danger. It is a well-established law of dietetics that the meals should be taken at fixed periods, and no food eaten at any other time. Nothing so weakens the power of digestion as the habit of picking up a snack here and there, as chance may offer. Even if it be but a bit of bread thus taken, it is not safe. The smallest morsel of food is apt to arouse the full activity of the stomach and all the digestive apparatus, and thus forces which are designed for the important work of supporting life are wasted upon what can only, at best, momentarily content a caprice of the palate.

The luncheon, when taken regularly, is too often, with the man of business, a meal eaten so distractedly, and dispatched so hastily, that it is impossible for the appetite to enjoy or the stomach to digest it. The merchant has the habit of work-

ing while he eats. Although he may drop the pen, on taking up the knife and fork, his head remains busy with his debit and credit calculations. He leaves out one important item, however—that which is due to health.

The neglect to eat the midday meal at all, or as it should be eaten, is a common cause of an immoderate indulgence in strong drink, with all its fearful consequences of moral and physical ruin. It is so easy to slip in and out of a bar-room, and gulp down at its slushy trough the ever-ready draught, that many men are tempted to still the cravings of hunger, and support the weakness from long fasting, by a means which takes no time from the office-hours and no thought from business preoccupation. Many drunkards are formed, and persons ruined in health, if not in morals, by this miserable parsimony, which will not spare a moment from the work of the day to secure the happiness of a life.

The luncheon, if it is to be taken when the dinner should be, ought to be a substantial meal, always at the same fixed time. It must never be slurred in favor of any of those miserable pretexts of the bar-room or confectionery, but made a regular repast, to which the guest may sit down, eating and enjoying his food deliberately. A bowl of

bouillon, well prepared, as it generally is by the French and German cooks, and a single broiled cutlet of mutton or veal, with a plentiful supply of well-baked bread, is a very fair enumeration of the essentials of a proper luncheon for those who have breakfasted lightly, and look forward to a late substantial dinner.

The dinner, as the chief repast of the day, ought to be regarded with a seriousness becoming so important an element of the daily life. It has its social and moral, as well as dietetic aspects. The French, whose gastronomic judgment is beyond question, tell us that the dinner should consist of a soup, an *entrée* of fish, or light animal food, a roast of one kind or another, a dish of vegetables, a pudding or some substitute for it, and a dessert of cheese, fruit, cake, or ices. This is, however, a more elaborate combination than the simpler American taste demands.

The soup is less often seen on our tables than it should be. It is, however, a desirable feature of the daily dinner. If properly made, there is nothing so good to begin with. It quiets the excessive craving of the stomach, but does not satiate the appetite. Thus, while subduing voracity, it at the same time leaves a sufficient eagerness for the more substantial food. Soup, moreover,

being absorbed readily, as most fluids are, does not exhaust the digestive power required for the solid articles of diet.

Fish, of which our great bays and rivers supply so vast an abundance of the best kind, is far more rarely used than it ought to be by the Americans. It commends itself, not only as a nutritious and appetizing food, but as a source of supply, according to the chemists, of the phosphorus of the brain, believed to be essential to the due performance of its intellectual functions. The white kinds of fish, such as the cod, are the most digestible, and no more healthful dish can be put upon the daily table.

For the roast, the whole domain of flesh and fowl is at command; and variety is both pleasing to the palate and essential to good digestion. The ingenuity of the housekeeper should be constantly on the alert to vary the dishes of the dinner. The English and American practice of using large joints of meat is apt to give too great uniformity. The monstrous sirloin of beef, massive loin of veal, or great leg of mutton, will last a small family the whole week, so that it is cut and comes again day after day; and often the Saturday dinner is but a rehash of that of the previous Sunday. The meat thus not only palls

on the taste from sameness, but becomes vapid and innutritious from repeated cooking.

The dish of vegetables, in the United States, is too exclusively composed of potatoes. Potatoes, if properly cooked, are an excellent food; but they should, for the sake of variety, at least, yield their habitual place occasionally to other equally appetizing and nutritious vegetables. The salad is seldom absent, at any season of the year, from the French and German tables, and, although in ill repute with us, in consequence of its supposed indigestibility, seems to agree with the European stomach. The free use of oil in the mixture of a salad of lettuce, or other vegetable, seems to make it a safer article of diet; and if eaten, not as a separate dish, when it is apt to be devoured voraciously, but as an adjunct to the roast, it may be indulged in without danger.

The simple farinaceous pudding, especially for the young, is more healthful than pastry, and a dessert of dried or fresh fruit better than the elaborate preparations of the confectioner.

CHAPTER XVI.

The best Preparative for Dinner.—Provocatives to Appetite.—The Danger of Stimulants on an empty Stomach.—The proper State of Mind before Dinner.—The Half-hour before Dinner.—Mutual Influence of mental Emotion and Digestion.—Social and solitary Dining contrasted.—The Length of Dinner.—Wine.—Its Use and Abuse.—Kinds of Wine.—How to be taken.—The Siesta appreciated.—Exercise after Dinner.—*Tasse de Café.*—*Petit Verre.*—Tea and Supper.—Luxuries.—Ices, etc.

A GOOD appetite is undoubtedly the best preparative for dinner, as for every other meal, but natural hunger alone, and not any artificial means, should be allowed to provoke it. The preliminary glass of sherry-and-bitters, or the fatal absinthe, will indeed, by stimulating the stomach, arouse its languid powers to a spasmodic effort; but it quickly exhausts its energy in exciting inordinately its action. The use of stimulants to improve the appetite soon fails to produce the desired effect, and, moreover, weakens at first, and finally destroys, the digestion.

When the stomach is empty, its absorbent power is intensely active, and any fluid put into

it will be immediately taken up and distributed. Thus the immense danger of taking powerful stimulants at such a time. Their effect is increased a hundred-fold, for their peculiar action on the brain and nervous system is heightened in proportion to the rapidity with which absorption takes place. If the rule of never drinking beer, wine, or spirits when the stomach is empty should be generally adopted, there would be little occasion to deplore the physical and moral horrors of drunkenness.

Irritability of temper, anxiety of mind, or absorbing thought, is a bad preliminary to the dinner. Every one, on taking his seat at the table, should be, if possible, in a mood of cheerful composure. The domestic influence is best calculated to secure this desirable condition. By its gentle appeals to social companionship and affection, it distracts the mind from the preoccupations of business and the worries of daily life. The welcome home, the fond caress, the eager effort to please, the ready preparation, the freshened aspect of every thing, all betokening expectation, and giving assurance that no zeal or affection are wanting to make a man happy and comfortable, are sure to conjure away from the darkest brain the most horrid spectres raised by

the craft of the outer world. Surrounded by all the cheering influences of domestic enjoyment, a man finds himself in the best possible humor and condition for eating and digesting his food.

It is always well for the busy man, who has hurried home to his dinner, to pause a quarter of an hour or so before sitting down to it. Excessive fatigue is not favorable to digestion. The delay occasioned by, as well as the refreshment obtained from, a careful performance of one's toilet is a good preliminary. The want of punctuality of many housekeepers is often a cause of irritation, by which the appetite, as well as the digestion, of the hungriest and healthiest is spoiled. The half hour before dinner, while the guests are only occupied with thoughts of it, is said to be the longest in the whole day; and if the time is by any chance protracted, there is nothing so trying to the mortal patience, and well calculated to engender irritability and those other unamiable states of mind which are particularly unfavorable to the health of the stomach.

"A man's body and his mind are like a jerkin and a jerkin's lining: rumple the one, you rumple the other." This physiological fact, thus applied and humorously illustrated by Sterne, is very apparent in the mutual influence of diges-

tion and mental emotion. Both brain and stomach must be free from any mutual disturbance, for either to perform its functions properly. Cheerfulness of mind is as essential to a good digestion, as a good digestion is essential to cheerfulness of mind. When the stomach is performing its duties, any excessive action of the brain is sure to interrupt them. A state of gentle and pleasurable excitement of the mind is, however, favorable to digestion. "Chatted food," according to the old proverb, "is half digested." With the sociability of a mixed dinner-company, which a well-regulated household ordinarily supplies, there is just the degree of mutual liveliness most favorable to the performance of every bodily function, and especially digestion. Solitary dining, then, should be always avoided.

The lengthening out of the dinner, by its division into several courses, provided each is not devoured as voraciously as if it were the only one, but the appetite is fairly apportioned among the whole, is favorable to enjoyment and health. The opportunity is thus afforded of interlarding the meal, during its necessary pauses, with that pleasant discourse which promotes cheerfulness and favors digestion. A full hour ought to be given to the daily dinner, that there may be op-

portunity for deliberately satisfying the demands of conviviality as well as those of appetite.

No one in a perfect state of health need drink wine or spirits of any kind when eating, or at other times. This perfection of health, however, is an ideal rather than a real state of being; for, among those who live the life of modern civilization, there are but very few who can be said to possess it. The crowding together in large communities, and the corruption of the air which ensues from this mutual closeness of contact, are causes which prevent the great majority of mankind from reaching the highest standard of health. Though this point, it is hoped, is being constantly approached, through a more strict and general obedience to the laws of hygiene, it is yet, unfortunately, very remote from the attainment of most individuals and communities. While large towns are allowed to reek with impurities by ignorant and corrupt municipalities, and private dwellings are kept unwholesome by the perversity of their inhabitants, no one can find the conditions essential to perfect health.

The individual life of modern times, from its excessive emotional character, is also a cause which tends to deteriorate the average health. The eagerness to become rich, the strife of com-

petition, and the fluctuations of fortune, with the dissipations of luxurious living and fashionable habits, give rise to excitements and alternating depressions which lower the tone of the physical life.

The modern man of civilization may be said to be, in consequence of his subjection to these various causes, in a state of constant nervous irritability. This may not be actual disease, but it is certainly not genuine health. It is a condition of weakness showing, as the doctors say, a want of tone. Regarding, therefore, modern men as more or less patients requiring medical treatment, we should not hesitate to prescribe for many of them the moderate use of wine. The very condition, however, which would seem to call for small doses positively forbids all large ones; for excess is more fatal to the weak and irritable than to any others. A small quantity of vinous stimulant, taken at proper times, seems to act as a constant preventive of that lowness of tone to which the nervous system of the modern man constantly tends—a condition especially favorable to the contraction of disease of all kinds.

Wine, if permitted, should be used, however, only as a beverage with dinner. A third of a bottle daily, of good sound claret mixed with an

equal quantity of water, and drunk gradually, in the course of the meal, will be found to act favorably upon the appetite and digestion of most people. A glass or two of pure Bordeaux, or even of a fine dry Champagne, like the "Consular Seal," or some other genuine brand, drunk at dinner, may be indulged in not only with safety, but advantage, when any unusual tendency to depression manifests itself. The habit of sitting for hours at the table, sipping, as the English do, glass after glass of heavy port, or brandied sherry, is a dangerous one. Wine should be drunk with the dinner, and never before or after.

A practice prevails which, once indulged in, is very apt to be repeated—that of sleeping after dinner. It is a bad one, and, although irresistibly pleasing for the moment, is sure to be the source of much subsequent discomfort. A half hour's nap in the day is a poor compensation for the loss of several hours during the night, which is sure to be the result. The whole nocturnal repose, in fact, is disturbed; and any one who wishes to secure the full rest required during the twenty-four hours ought never to attempt to obtain a part of it in advance of the proper time.

In spite of the old proverb which says, "After dinner rest a while," an active walk, provided the

meal has been a proper one, and eaten with the deliberation and under the circumstances already prescribed, will be promotive of digestion, and prevent that tendency to somnolency, the indulgence of which is neither favorable to subsequent comfort nor health.

The after-dinner *tasse de café*, when once habituated to its use, is not unfavorable to digestion; but if taken only occasionally, and at a late hour, by those unaccustomed to drinking it, it is sure to deprive them of much of the night's sleep. The *petit verre*, or little glass of brandy, or some strong *liqueur*, should never be indulged in.

Late diners do not require the tea, or supper. Those who take the principal meal at an early hour should eat another meal before the day is over. A cup or two of tea, with some substantial food, as an omelette, chops, or a cut of cold meat, will constitute a sufficiently solid repast for the last of the three, which is the full number of meals required by the vigorous and healthy. Whatever luxury, such as an ice, or other confection, people are disposed to indulge in had better be taken immediately after dinner than an hour or so later; for when digestion has once begun it is not safe to interrupt its operation by any fresh call upon the exertion of its powers.

CHAPTER XVII.

The superfine Apartment.—Palaces and Mansions.—Requirements of Art.—Renouncement of best Part of the House.—Show and Lumber Room.—Space of Parlor.—Ventilation.—Open Fires.—Sunlight.—Sydney Smith.—The domestic Dungeon.—Objects of shutting out Light.—Furniture of the Parlor.—Ceremoniousness of the Parlor.—Effect of superfine Furniture.—Rugs and Carpets.—Parallelograms.—Bay-windows.—Pictures.—Picture-frames.—Engravings.—The Books of the Parlor.—Amusements of the Parlor.

THE superfine apartment of many of our modern houses, ordinarily termed drawing-room or parlor, is an abomination to taste and common sense. To set apart the main portion of a structure intended to live in, and after filling it with a variety of tawdry furniture too fine for use, to close it hermetically, is evidently an absurdity. This absurdity, however, obtains so commonly that it may be almost regarded as national. Palaces and the imposing mansions of the rich and great are designed more or less for the display of architectural art; and the effect depends much on spaciousness. They have accordingly a superflu-

ity of room, which may be appropriated for purely decorative purposes. This would be in harmony with the main design of these structures; and no one, provided the laws of art are faithfully obeyed in the construction and ornamentation of a palatial hall or apartment, is entitled to condemn it merely on the ground of its uselessness for the common purposes of life.

The grandeur and spaciousness of the palace or stately mansion may, indeed, be said to have a practical use, inasmuch as they are more or less essential to the periodical show and entertainment exacted by society from its inhabitants. The ordinary citizen, however, is under no social obligation that we know of to renounce the use of the best part of his dwelling-place. His wife can surely do proper honor to the rare visits of the Reverend Ignatius of her parish, and the formal annual call of the wife of rich Bullion, the broker opposite, without reserving an apartment expressly for the purpose.

The parlor, of which we propose to discourse, is not the show or lumber room of fine upholstery, but the sitting-room of the family, and this should be essentially adapted to that object. The largest and best-situated apartment may be appropriately used for the parlor, since it is the usual ren-

dezvous of all the inmates of the house during periods of leisure and enjoyment, and at times is the place of reception for a greater or less number of visitors. Extent of space, as well as freedom of ventilation, is therefore especially necessary to the room which must be more frequently thronged than any other in the house. An open fire-place, with blazing wood or a grate of sea-coal, affords an excellent ventilator during the winter, when almost every other means of entrance or exit of air is closed, and, if economy will permit, may be used, though the general warmth of the dwelling is sustained by the ordinary furnace. A brisk, visible fire is, moreover, always a cheerful object and an attractive point for the concentration of the family about the domestic hearth-stone.

As we consider an abundant supply of the sun's light to be essential to the wholesomeness of every occupied apartment, we would insist more especially upon the freest allowance to the general sitting-room, where so much of the life of the family is passed. We heartily agree with the joyous Sydney Smith, who, as he burst into the parlor, would throw aside curtain, blind, and every other obstruction, and, letting in a flood of daylight, exclaim, "Let us glorify the room!"

The sitting-room should always be situated, if possible, on the sunny side of the house, not only for the sake of health, but cheerfulness. There is in many of our modern dwellings a dark middle chamber, between the drawing-room in front and the dining-room in the rear. This is not rarely the chosen dungeon for the self-immurement of the family. There is no more ingenious contrivance for torture of soul and body. It is, however, particularly favorable to delicacy of complexion and gravity of demeanor. Health and happiness are, of course, trifling considerations in comparison with the fashionable paleness of face and formality of behavior!

The common practice of shutting out the daylight has, ordinarily, for its motives the saving of the delicacy of tint of the superfine carpets and hangings of the parlor, and of the complexion of its inhabitants, or concealing their want of it. We do not admit either of them to be proper. We have no hesitation in preferring the pure brightness of heaven's light to all the fantastic colors of Paris and Brussels art, and the natural ruddiness of health to the real or affected paleness of fashion.

The furniture of the parlor, which is not only the family sitting-room, but the place for the re-

ception of visitors, may be unquestionably of a choicer kind than that of the rest of the apartments. Finery, however, should always be kept in due subordination to utility, and we do not admit of chairs and sofas so gorgeous that they must be generally concealed from sight and secured from touch under the cover of ugly smocks, and carpets so delicate of tint that only the glass slipper of a Cinderella can safely tread upon them. The parlor, which may be regarded more or less as the school of manners of the family, is, to a certain extent, to be used ceremoniously. Children are not expected to lounge and romp in it with the same freedom as in the nursery, and its usual occupants, young and old, are supposed to hold themselves ever in readiness for the visit of a friend or a chance visitor. While, however, a certain formality of decorum may thus be proper, there should be nothing allowed to restrain the freedom of intercourse of the family, and prevent the physical ease and comfort of any of its members. Superfine furniture, with the ever-watchful care it enjoins, is sure to do both; it checks movement and stiffens the manners. The modern drawing-room, with its vulnerable splendor and chilly formality, is a great discouragement to genial companionship and hospitality. The

shams of so-called society are fitly enacted within the glare of its gilded unrealities, and those who tread its tinted carpets and sit upon its glistening sofas are no more the personages they represent than those who walk and attitudinize upon the painted stage of a theatre.

We prefer large rugs or movable carpets to immovable ones, as they can be readily lifted for the sake of cleanliness, and at a moment's notice to give opportunity for an extemporized dance or a permitted romp of the younger folk. The arabesque patterns and combined and deep-toned colors of the Persian rug are, according to our sense of the fitness of things, more suitable to be trod upon than the bouquets of brilliant flowers and the surface of milk, on which they are seemingly afloat, of many fashionable carpets.

The parallelograms into which the requirements of the town lot have shaped most of our rooms leave four walls, the ugly stiffness of which it is difficult to break by any ingenuity of taste. If the builders would take our advice, they would never construct a parlor without a bow or bay window to interrupt somewhat the necessary formality of the parallelogram. Something can be done, however, to mitigate the box-like arrangement of the modern sitting-room by appropriate

frescoing of the walls, and breaking their continuity by pictures, statues, or brackets, and hanging book-cases. The color of the walls should never be white. The tint (although this should vary according to circumstances) which seems most generally becoming is a light maroon, and it harmonizes well with the ordinary dark wood of parlor furniture and paintings, without interfering with their effect. We need hardly say that good engravings are better than bad pictures. As but few can afford master-pieces of the painter's and sculptor's art, most had better confine their desires to the possession of well-executed engravings and plaster casts, which are so cheap that persons even of humble means can afford to purchase them. There seems to be a growing taste for frames of dark wood for mirrors and pictures. We can not sympathize with this funereal taste, and we never saw either mirror or picture which was not seriously damaged in effect by such a surrounding. Gilding is indispensable in most cases.

To complete the idea of the parlor as the family sitting-room, books for general use are requisite. The library or study of the studious may be left, for the moment, entirely out of the question; but, apart from its requirements, the parlor

should always contain certain works, especially of reference—an encyclopedia, gazetteer, atlas, dictionaries of various languages, a few of the standard classics, and a Shakspeare, above all—that there may be at hand a means of settling at once the various literary and scientific questions which are sure to arise in every family of ordinary intelligence. A small book-case, then, so filled, must be a part of the furniture. The photograph album, the port-folio of sketches, the chess and checker boards, and other permissible games and sources of diversion, are, of course, indispensable in that habitual resort of the family, as we regard it—the parlor.

CHAPTER XVIII.

Influence of Mind on Body.—Exciting and depressing Emotions.—Death of John Hunter.—Death from Joy.—Effects of Laughter.—An Eastern Apologue.—Effects of Fear.—A British Expedition.—Dying of a broken Heart.—The Health of the House.—How affected by Influence of Mind on Body.—Influence of domestic Affections.—Cowed Children.—Vague Ailments of Women; Cause.—Social Life of the House.—The Father at Home.—His Power.—A Master of the Revels.—Sympathy of Wife and grown Children.—Social entertainments.—Fashionable Parties.—Story of an English Ambassador.—Burning Bank-notes.—Display of fashionable Party.—Appreciation of the Guests.

Any one who observes the tears flowing from the eyes, the blood rushing to the face, and the limbs trembling, in grief, shame, and fear, sees, and can not fail to recognize, the influence of the mind upon the body. There is not a mental emotion which is not accompanied or followed by some corporeal manifestation.

The actions of the mind, relatively to their effect upon the body, may be divided into exciting and depressing. The former are beneficial or hurtful according to their degree; but the latter

are always injurious. Anger, a pre-eminently exciting emotion, is known to have been frequently fatal to life. The celebrated surgeon, John Hunter, was so conscious of his peculiar susceptibility to the bodily effect of mental emotion, that he frequently said that the first fit of anger would kill him. His prediction proved true: vexed, one morning, on entering his hall, that the usual preparations for his lecture had been neglected, he could not control his temper, and fell dead in an outburst of passion. In Hunter's case, it is true, there was previously a disease of the heart, which made him more liable to the consequences of excessive excitement; but this is always injurious, and may prove fatal to people in perfect health. Persons have been known to die even from extreme joy, although, probably, in such cases, it was always suddenly and unexpectedly aroused, and the fatality was due rather to the shock of surprise than to the special emotion excited.

The exciting emotions which are pleasurable, such as joy and hope, are of a kind that seldom tend to a dangerous excess, and may be regarded as exercising generally an eminently healthful influence upon the body. Hilarity is a great refresher and strengthener of life. Its ordinary corporeal expression is peculiarly favorable to

health. Laughter is a wholesome exercise, which, beginning at the lungs, diaphragm, and connected muscles, is continued to the whole body, "shaking the sides," and causing that jelly-like vibration of the frame of which we are so agreeably conscious when under its influence. The heart beats more briskly, but with a safe regularity of action, and sends the blood to the smallest and most distant vessel. The face glows with warmth and color, the eye brightens, and the temperature of the whole body is moderately raised. With the universal pleasurable sensation there comes a disposition of every organ to healthy action. When hilarity and its ordinary expression of laughter become habitual, the insensible perspiration of the skin is increased, the breathing quickened, the lungs and chest expanded, the appetite and digestion strengthened, and nutrition consequently increased. The old proverb, "Laugh and grow fat," states a scientific truth. The influence of laughter upon the body is recognized by Shakspeare, in his description of the "spare Cassius"—

"Seldom he smiles."

"To be free-minded and cheerfully disposed at hours of meat, and sleep, and of exercise, is one of the best precepts of long lasting." Such is

the testimony of Lord Bacon to the favorable influence of the pleasurable emotions upon the body.

The depressing emotions, such as fear, anxiety, and grief, are always fatal to health, and frequent causes of death. There is an Eastern apologue which describes a stranger on the road meeting the Plague coming out of Bagdad. "You have been committing great havoc there," said the traveler, pointing to the city. "Not so great!" replied the Plague. "I only killed one-third of those who died; the other two-thirds killed themselves with fright." Depressing emotions predispose the strongest and most healthy bodies to diseases of all kinds, and especially to those of a contagious, infectious, and epidemic character. During the British expedition to Walcheren, the soldiers, while there was a hope of success, were remarkably healthy, but no sooner was failure manifest than there hardly remained a well man in the ranks, and the mortality became fearfully great.

Dying of a broken heart is no mere poetical exaggeration. Sorrow and disappointment have been frequent causes of death, and not only by their generally depressing influence, but by acting on the heart with a direct effect. Habitual anxiety or sadness is as unfavorable to the preservation as to the enjoyment of life.

The influence of mind upon body will be found to have an important bearing upon the physical health of every household. It should never be lost sight of in the conduct of a family. The domestic affections, although there is a much higher motive for their cultivation, should, merely as a means of hygiene, be carefully nurtured. The cheerfulness and gentle emotions which are engendered by all the kindly relations between the various members of a family are just those pleasurable excitants of the mind which are most favorable to the healthy actions of the body. The strictness of domestic discipline must be tempered by affection, and faults corrected, not with the violence of temper, but the calm judgment of duty. Many a child has had his body fretted into disease by a mind kept in constant terror by the ever-impending blow of a severe parent. The cowed child is never a healthy one. Freedom of life in every respect is essential to vigor of development. Childhood requires the encouragement of an ever-present confidence in the love of those upon whom its helplessness makes it dependent. If forced to shrink at every moment from the severe eye of authority, and hide itself on the first sound of an approaching footstep, the child will be sure to be a timid, puling, and weak

creature, to whom fullness and strength of growth are impossible.

Many of those vague ailments which afflict womankind may be attributed to mental causes. Their effects are visible enough in the early fading of beauty, the wasting of the body, and the rapid decay of all the vital powers. That companionship and sympathy so eagerly sought for in marriage, but, alas! found so often wanting, are essential to the happiness of every loving wife. The sadness of disappointment on missing them is, we are persuaded, a frequent cause of the ill health of married women. The excessive solitude to which the wife is often condemned by the long absence of a husband devoted to business, or by his anxious abstraction during his rare presence, is a life so different from that expected by the sanguine bride, that the sensible heart of woman must realize it with a shock likely to shatter both mind and body.

The social life of the house, which may be more especially regarded as that of the parlor, is an obvious means of regulating the influence of mind upon body favorably to health. The father should never allow business, and much less any frivolous distraction of club conviviality or other kind, to keep him habitually from his ap-

pointed place in the parlor during the usual periods of family gathering. He should come from his daily occupation as free from its cares as possible, and meet his wife and children with a heart ready to respond, in fullness of sympathy, to the overflowing welcome he receives. They claim him now for their own, and he ought not to refuse to devote himself to a service so affectionately demanded and unquestionably due. It requires no great resources for a father to interest his family. His mere presence gives contentment, and awakens those gentle impulses of love and affection which constitute the charm of domestic life. An approving smile encourages hope and gives confidence; a tender word allays anxiety and subdues grief; a nod represses rising passion, and an uplifted finger settles a quarrel.

A parent, however, of the least intelligence and culture need and ought not to be content with this passive influence. He should exert himself actively to entertain his family. He should constitute himself, as it were, the master of the revels, romp with the little ones, if need be, direct their plays, narrate his pleasing experiences with the great world, the reminiscences of his own childhood, and the adventures of travel, and read aloud those books of imagination, fancy, and

striking fact and incident, which are so interesting to youth of the smallest intelligence. Exciting their merriment, arousing and satisfying their curiosity, provoking and cultivating their taste for the wonders of science and the conceptions of literature, the father will thus not only make his children more cheerful, happy, and intelligent, but healthier. When the day has closed upon the little ones, and they are put to bed, in a gentle fervor of delight and contentment, they lie down soothed by vanishing images of joy and happiness which, lightened by the glow of paternal affection, lead them on to the blissful realms of sweet and refreshing slumber.

To the wife and grown children the husband and father should impart the experiences of his daily life, that they may sympathetically share with him in its triumphs and defeats. He need not dwell upon every carking care and worrying meanness which, more or less, ruffle the smoothest temper in its contact with the miscellaneous and uneven world, but he will be happier himself, and render those about him happier, too, if he keeps not too close to his own breast the corroding secrets of disappointment and misfortune in business. Many a man, by his reticence toward his own family, has nursed and strengthened a

canker as destructive of health as of happiness, that wanted only the salve of connubial or filial affection to deprive it of all its malignancy.

Social as well as domestic entertainment may be regarded as a special part of what we have termed the parlor life. Genuine hospitality, and the reception of visitors, should be cultivated and encouraged; but what is ordinarily called party-giving, with its waste of money and dissipation of health, can not be commended to any prudent householder. The late hours, stifling atmosphere, and excess in eating and drinking, which are inseparable from the fashionable party, are risks to life to which no judicious parent will expose himself or his family. The prodigality, moreover, of expending in a single night what might be the means of diffusing a refined enjoyment over a whole year, is an absurdity which the folly of fashion alone will be found to justify.

A good story is told of an English ambassador at the court of Naples. He gave an evening party, the excellent taste and delights of which were appreciated by every guest present. It became known, however, that the entertainment, the charms of which no one refused to acknowledge, had been got up at a very small expenditure of money. Thence the gossips, forgetting the great

pleasure it had given, and only mindful of the small sum it had cost, busily talked of the cheapness of the entertainment and the parsimony of the giver. This reaching the ambassador's ears, he sent out invitations to the same people who had been present at his first charming but inexpensive party to come to a second at his hotel. The evening arrived, and the guests, in full anticipation of a brilliant display, gathered; but lo! there was no preparation made for the expected entertainment. The host, however, presented himself, and was soon followed by a servant bearing a lighted alcoholic lamp. The ambassador, with no more ado, took from his pocket a handful of bank-notes, and, throwing them into the blaze, said to his assembled guests, "There! Are you satisfied?" and dismissed them to their homes.

His excellency had evidently, on the first occasion, in providing for his guests a refined enjoyment, totally misconceived the spirit of modern entertainment. He, however, showed, on the second, with a quick perception of his former error, a just sense of the social obligations of a host as now interpreted by the fashionables of our day. His blazing bank-notes, as they squirmed in the fire and went off in smoke, and the gaping guests

looked on in stupid amazement, are as perfect an illustration as possible of the relation between the modern entertainer and the entertained. All givers of a fashionable party seem striving to surpass their competitors in the quickness and publicity of burning bank-notes, and their guests crowding to behold and have their wonder excited by the prodigality of the sum wasted.

Wasting bank-notes, however, whether burned directly in the blaze of an alcoholic lamp, or indirectly consumed in the extravagant and senseless dissipation of a modern entertainment, is not hospitality. The profusion of flowers, suddenly wrenched from a culture of months of skill and labor, to lose their bloom and waste in a night their sweet odors for those who have no sense of appreciation but an arithmetical one—the prodigal supply of elaborate delicacies and rare wines to surfeited appetites—costly upholstery for rude hands to derange and test with a tradesman's computing touch of price and value—and all the exorbitant display and destruction of costly material—are not to cherish a sentiment of friendship or a refinement of taste. The bill of the confectioner, the bill of the florist, the bill of the wine-merchant, and the bill of the upholsterer, paid in full and exhibited in public, though it

might be often difficult to show them under such a favorable condition, would, provided they were large enough—and the accomplished tradesmen of New York can readily effect this—in reality answer all the requirements of a modern fashionable party. These would more clearly exhibit the cost—which is all that seems to be wanted—than if left to the appreciation of the guests, many of whom, however, it must be acknowledged, are not wanting in a practical and ready appreciation of the market prices of dry goods and groceries.

CHAPTER XIX.

The Library.—Books and Book-cases.—Furniture.—Easy-chairs.—Light.—Diffused or concentrated Light?—The Strength of the Eye.—*Muscæ Volitantès.*—Influence of general Disease upon the Eyes.—How to protect the Eye.—Irritated Lids.—Short-sightedness.—Long-sightedness.—Young People's Sight.—Old People's Sight.—How to choose Spectacles.

It is a cheering proof of the general recognition of the importance of books, that no modern house of the least pretensions is without an apartment appropriated expressly for keeping and professedly using them. The library, so called, is not always, it is true, as may be pretended, a place for reading and study.

The suddenly made rich and uncultivated man, in building his new house, resolves that it shall have the completeness of a grand mansion, and gives his orders to the architect, not to satisfy such tastes as he may possess, but to absorb the large sum of money he is willing to spend for the display of his newly-gotten wealth. He will have, he declares, all that dollars can pay for, and,

of course, his new house "must not be without a butler's pantry and a library," which, though in reality they have no more connection than the "Paradise Lost" of Milton and a sirloin of beef, he associates together as the essential appurtenances of a dignified residence. The library, however, though its richly carved book-cases may be as indiscriminately filled as the dusty shelves of a street book-stand, is not without its good effect. Books seem to exercise a refining influence by their mere presence, though they may never be read. We may grant that the master of the house seeks only his library as the quietest place wherein to doze over his newspaper or sleep off the effects of his heavy dinner, and that his splendidly bound volumes are in reality no nearer to him than the gilded cornices of his ceiling, yet the apartment and its contents are a desirable possession. The children are brought up with the consciousness, at least, that there are such things as books, and a place nominally provided for the study of them, and it is presumed that, with a better opportunity of education, they will have a livelier sense of the proper use of both than their unappreciative and somnolent sire.

All houses of sufficient extent to admit of it should have a room set apart for a library. This

ought not to be that stately apartment, perpetually smelling of morocco, varnish, and new carpet, of many fashionable mansions, which, with its richly carved rose-wood, plate-glass, and book backs of gilt, is kept to exhibit to company as one of the series of show-rooms in which the proprietor of the house delights to display his money's worth.

According to our notion, the library should be essentially a room for use. This, indeed, should be of an especial kind. As study and reading are the purposes of the library, it should be reserved for these, and none of the other occupations and diversions of the family ought to be allowed to interfere with them. Nothing is more favorable to the acquisition of the habit of using books than having them of easy access, and collected together in a place convenient for their perusal. In ordinary families the library, as we call it, or study, as it may be termed, might be used, under proper regulations, as a place for the youthful members of the family to prepare their lessons set for them at school and college, and should have all the conveniences they may require.

The literary, scientific, or professional man will, of course, have his library to suit his particular

purpose. His books and the apartment which contains them are like the tools and workshop of a mechanic, and are to be adapted more or less to his special vocation. Our general remarks are therefore, of course, less applicable to his requirements than to those of others. The library we have in view is essentially a family one. The room appropriated to the purpose should be spacious, properly ventilated, and particularly well lighted. As it is chiefly intended for books, it would be well to select an apartment with broad, unbroken walls, that there may be sufficient space for the cases to contain them. If practicable, the library should have a window, or windows, at both ends, and but one door. Open shelves are better than closed cases. In all real libraries the books are exposed without glass or other cover, so that they may be conveniently got at without any preliminary fumbling with a key at a lock, than which there is nothing more trying to a man in the heat and impatience of research. There can be little risk in thus exposing books, or the book-seller and the librarian would not habitually do so with their valuable stocks and collections. The freest circulation of air is essential, in fact, to the preservation of books from the effects of moisture and damage from worms. The cases,

accordingly, had better be open, and always kept a short distance away from the wall. All the protection ordinary books require may be secured by means of strips of cloth tacked to the edge of each shelf. This will prevent the accumulation of dust. Judicious use is, after all, the best preservative; but if the contents of the library are only kept for show, it will be necessary to treat them with all the nursing care required by any other fine furniture.

Books themselves are always the most interesting and becoming objects for the eye to rest upon, especially in a library. All concealment, therefore, of them by means of drapery, or any other contrivance of the upholsterer, is inappropriate, and contrary to every dictate of good taste. When we behold any thing of the kind, we have immediate suspicion of a sham. We recall to mind how once we eagerly opened the plate-glass doors of a book-case draped with beautiful pink satin, radiating in glistening pleats from a central sun of gilt, in expectation of finding some choice literature worthy of being thus magnificently embalmed. The doors yielded quickly to our impatient haste, when, lo and behold, we don't know how many white pots of jam, all in a row, stared us in the face! These were undoubtedly creditable il-

lustrations of the housewifery of the dame of the mansion, and delectable specimens of their kind, but they were not the sweets which we were in search of.

The book-cases, which are the chief furniture of a library, are much more convenient for use when they are made only so high that the uppermost shelf may be within easy reach of the outstretched arm. When thus constructed low, they moreover offer good foundations for statuettes and busts, and have a more tasteful effect.

A table with a solid hold upon the floor, a broad cloth-covered surface, and numerous easy-sliding drawers, a few well-cushioned chairs, and a thick carpet or rugs, are the chief requirements of the library, in addition to the books and the cases which contain them. Most students, however well-warmed may be the apartment in which they work, are liable to suffer from coldness of feet. Instead of attempting to remedy this by raising to an excessive degree the general temperature of the room, it is better to make special provision for the warmth of the feet by having a fur skin of some kind or other for them to rest upon. In case of protracted study or writing, it is well to vary frequently the posture of the body, and therefore we would recommend, in addition

to the library table, a standing desk, or *pult*, as it is called by those most persistent of students, the Germans, who universally use it.

It is a common mistake, we think, to employ concentrated instead of diffused light for night-work. Where necessity compels the economy of a single lamp, it is no doubt better to have a shade to confine its limited brightness to the point where it is especially required by the eye. Where, however, no such motive prevents a free supply of artificial light, the more complete and diffused it is, the better it will be, both for clearness of vision and the health of its organ.

The eye, which is called a delicate organ, can endure a great deal of work; but though it may be freely used, it ought never to be abused. Engravers, microscopists, and others, who employ their eyes constantly on the minutest objects and in the strongest concentrated light, have continued their occupations for a long series of years, without any more manifest failure of sight than was due to the natural effect of age. Dr. Donné, a French physiologist of some repute, declares: "For my part, I have conducted microscopical observations to an excess during many a long night, under the brilliant light of a Carçel lamp, in order to study the transformations of the in-

fusoria, or discover the vibratory cilia by which they move; and when, in the morning, I said to myself that my sight must necessarily be fatigued, and put on, in consequence, blue spectacles to give it repose, I soon found that the precaution was unnecessary, and that my eyes had not suffered in any respect."

There are certain dark points and filaments, called *muscæ volitantes*, which occasionally flit before the eyes, particularly when looking at a white surface or an object brightly illuminated. These often give great alarm, but quite unnecessarily, since they are no indications of weakness or approaching disease.* Most people can have these *muscæ volitantes* at their will by merely di-

* "The vitreous humor, optically speaking, is not pure. Small granular or wavy forms, which all of you at times have seen hovering within your field of view, and which pursue so many a hypochondriacal man on his summer-trip to a watering-place, are occasioned by shadows thrown on the retina by a partial, delicate opaqueness in the vitreous humor. Those bodies are so light as only to be perceptible either in certain effects of light, or on a peculiar exertion in the straining of the attention. By a simple experiment it is possible to make every person acquainted with these guests of his field of view, the so-called *mouches volantes;* only one must be prepared for those formerly overlooked, but, once honored with attention, never again stirring from their post."—*Sight and the Visual Organ*, by A. Von Graefe.

recting their attention to them, which seems to prove that their existence is natural, although not generally observed.

Most of the ordinary ailments of the eye are produced by some disorder of the body, and the best safeguard against the local affection is care of the general health. Washing the eyes carefully, and opening them in the water, is sure to strengthen and protect them against disease. The edges of the lids are frequently a source of trouble, from being irritated by cold or other causes. The exudation which gathers and thickens upon them should be gently softened with warm water, and its accumulation prevented by a slight application of sweet-oil or mutton-suet, before going to bed.

All oculists are now agreed in recommending the use of glasses as soon as the want of them is discovered.

Short-sightedness and long-sightedness are dependent upon conditions of the lens of the eye, which are organic, and are not to be removed, but only alleviated, by artificial means. Short-sighted people are often told that they possess stronger eyes than others; but this is by no means true, and they should not presume upon this unfounded idea. The habit in youth of read-

ing with imperfect light, and consequently placing the eyes too closely to the letters, is a dangerous one, and will tend to produce that organic change which finally results in short-sightedness. Old people must not neglect too long the hints of time, but resign themselves, as soon as age indicates, to the aids it requires. The concave spectacles of the short-sighted and the convex ones of the long-sighted are to be chosen according to the facility they give in seeing. This is only to be found out by experiment. Glass after glass must be tried on small print, and that selected which seems most easily to endow the sight with its natural power at a convenient distance.

CHAPTER XX.

The Devil's Imps.—Hope for their Salvation.—Morals and Masonry.—Good Cooks and good Kitchens.—Underground Kitchens.—Pantries and Store-rooms.—Sinks and Water-supply.—Dresser and its Ornaments.—A separate Room.—Spoiling Servants.—A Nation of Wasters.—Good Things thrown away.—Tripe.—Heart.—Cow's-heel.—Cock's Comb.—Bad Cooking.—Large Fires.—Cooking-ranges.—What a Handful of Charcoal does in France.

It must be, we suppose, because the truth of the proverb, "The devil supplies the cooks," is taken for granted, that such infernal quarters are often provided for them. When tortured by the dyspeptic agonies which are easily traceable to their perversion of the good things of this life, and suffering from the dispensation of the various evils which they seem to delight in inflicting upon mankind, it is not hard to believe in the demoniacal origin of most of our cooks. It is, however, well worth our while, as we are at their mercy, to make the attempt to turn them from their vicious ways. This, difficult as it may be, is presumed to be possible; for, as Uncle Toby thought there was a reasonable hope for the salvation of even

Satan himself, it may be inferred that there is a fair chance for the conversion of his imps of mischief in our kitchens. We shall find that by bettering their ordinary places of abode, and surrounding them by all the best appliances for good, a tendency to this much-desired result will be effected.

It is a well-established fact that human character and conduct are greatly dependent upon the material life of the being. Pure air, clear light, a proper dryness of the atmosphere, and a well-regulated temperature, exercise not only a wholesome effect upon the body, but a beneficial influence upon the mind. Energy, docility, and a cheerful performance of duty, are dependent upon the very air that is breathed. Morals and masonry are thus closely connected, and a badly-constructed house or room may, in shutting out the pure breath of heaven, close in the heart against the best influences of the virtues.

To have good cooks, we must have good kitchens. These require to be not only provided with all the essential implements of the necessary handiwork, but to be made comfortable, cheerful, wholesome, and convenient abodes for those who are forced to spend most of their daily life in them.

It is a misfortune, we think, that, by the ordinary mode of building houses in this country, the kitchen is made more or less an under-ground apartment. It is thus generally difficult to secure that supply of air and light especially necessary for a room where there must be a superabundance of heat at all seasons, and an accumulation of various odors to be got rid of, and the delicate manipulation of the work requires the clearest vision. The kitchen, being placed below the rest of the house, has, moreover, the signal disadvantage of tending to poison, with its reeking odors, the atmosphere of the whole building. It should be situated, if possible, on the ground-floor, and contiguous, but not subjacent, to the main structure, and, for convenience' sake, closely connected with all the domestic offices, pantries, store-rooms, larder, laundry, and scullery, if the importance of the mansion should admit of such extensive appurtenances. The sinks and water-supply ought never be too remote, and it will be convenient to have a special coal closet or cellar nearer at hand for the cook than the large general depository for fuel.

The kitchen should be of a simple and regular construction, free from hidden corners and all kinds of nooks favorable to deposits of dust and

dirt and the encouragement of slatternliness. The storing away of refuse vegetables, bones, and grease, for the benefit of the expected "swill" or "soap-fat" man, is a dangerous practice; for the corruption of such matter generates a variety of ill odors, and poisonous gases enough to infect the whole house and cause the most fatal diseases. No cupboards or closets ought to be allowed. A dresser with exposed shelves above and broadly opening drawers below is all that is requisite for convenience. This should be made of unpainted white wood, in order that it may invite a daily scrubbing with soap and hot water, and be all the better for it. The floor of the kitchen might be of white tiles, and should never be covered with matting or any thing like a carpet. The best ornaments are ranges of well-polished tins, bright coppers, clean plates, and a general purity, neatness, and order.

Where the house is of a size to admit of it, a room apart from the kitchen should be appropriated for the use of the cook and other servants during their meals and temporary moments of relief from work. This room should have every homely comfort and convenience; and though the fears of anxious housekeepers may be aroused lest their servants should be "spoiled," we venture

the suggestion that a shelf of suitable books be provided for their use. Among them there might be, in addition to the treatises on cookery and such-like, a few works of simple instruction and diversion. So far from "spoiling servants," of which our susceptible ladies of the house are so fearful, it is a sure means of improving them. By such opportunities of reformation and moral elevation they will acquire aptitude for their work and willingness to perform it, and we shall have more docile, contented, faithful, and intelligent servants.

Even during our days of comparative poverty, we, as a people, were at no time restricted in the use of the necessaries of life. The fertility of a new and extensive country always kept the supply of food in advance of the demand of a limited population. Having enough and to spare, we became, naturally, a nation of wasters. Our teeming fields once yielded a harvest so much beyond the wants of a scanty and glutted population, that the very grain of which bread is made was burned as fuel! There was no occasion, in those times of superfluity, to practice economy, and we consequently knew very little if any thing about it. With a change of circumstances, however, and the greater assimilation, in consequence,

to the condition of older nations, it has become necessary to exercise, like them, a more careful thrift.

There is in the United States a great deal of unnecessary waste of food. There is enough substantial nutriment thrown away in this country to sustain a population of many hundred thousands. It is not necessary to go to the Western prairies, where countless herds of buffaloes are allowed to die and to rot, the carcasses of which might keep whole nations from starving: the markets and kitchens under our own nose will supply us with abundant proofs. There are many articles rejected, ordinarily, by Americans as food which by foreigners are esteemed, and justly so, as most choice and nutritious. Without committing ourselves in favor of *filet* of horse, stew of cat, or rat *au riz*, we think that the example of both the French and Chinese might be followed to some extent with advantage. We have a wide choice of hitherto untouched articles of food before we are reduced to the necessity of transferring our roadsters from the stable to the spit, and our domestic favorites from the fireside to the stew-pan.

How many parts of certain animals, about the eatableness of which there can be no question,

are rejected by American feeders! It is seldom that any of them will touch, for example, tripe, which, properly prepared, is one of the most digestible and nutritious articles of food. There is, again, the beef's or calf's heart. The American gorge is, generally, so fastidious as to rise at this, which, cooked as it should be, makes a delicious repast, that, with the eyes shut, can not be distinguished from roast hare or grilled grouse. We doubt whether there are many native-born Americans who have ever heard of cow's-heel. This, however, is a tidbit worthy of the palate of an Apicius. It is easily prepared, and as readily digested. It is made, as its name indicates, of the hoofs of cattle, and is a delicate jelly-like substance, which no one who can be persuaded once to taste refuses to eat. There is also the comb of fowls, which in Paris is deemed a luxury fit to place before the *fins becs*, or fastidious *gourmets*, of that luxurious capital. Where is there the American cook who ever thought of making any other disposition of this than throwing it out with the feathers and other exuviæ on the waste-heap? What an unnecessary and wasteful discrimination we make in regard to fish! There are many species of these which are palatable and wholesome, but are entirely rejected. The skate,

for example, is a familiar article of diet in Europe, but is seldom tasted here. The frog, moreover—why should it be left merely as a *bonne bouche* for connoisseurs? Its delicacy and wholesomeness no one who has ever eaten it questions.

It is not only that in this country we are directly wasteful by refusing to eat what we might, but also most prodigal in the mode of consuming what we generally feed on. Bad cooking not only renders food difficult of digestion, but deprives it of much of its nutriment; and who can estimate the immense waste for which our ignorant and prodigal cooks are responsible? Millions of dollars are annually frittered away in the frying-pan, which is the favorite mode of cooking in the United States, but known to be the least economical and wholesome.

Much of the ruinous waste of American kitchens is due to the unnecessarily large fires used. From traditional habit and ignorance, our cooks persist in thinking that a great conflagration is necessary to be got up for even the smallest dinner, and will raise as much of a blaze to broil a single lamb chop as to roast a whole ox. This may be somewhat due, perhaps, to the peculiar construction of the American cooking-range. It has always been a surprise to us that the stove of

the French has not been adopted, who contrive by its means to broil a cutlet, boil a soup, or stew a ragout at the shortest possible notice, with the smallest quantity of fuel. A handful or so of charcoal suffices in France for the essentially good cooking of an ordinary family, while in America bushels of coal are burned for the essentially bad.

CHAPTER XXI.

Skill in Cooking.—Raw Articles of Diet.—Healthfulness of thorough Cooking.—Science of Cooking.—The great Essential of a good Cook.—Preliminaries to Cooking.—Keeping Meat.—Boiling.—Soup and boiled Meat.—Roasting.—The Inefficiency of Chemistry.—Taste and Science.—Process of Roasting explained.—Broiling.—Frying.—Stewing.—Salt Meat.—Cooking Vegetables.—How to cook a Potato.—Tea and Coffee: how made.—Pastry, wholesome and unwholesome.—Vessels and Utensils of the Kitchen.—Death in the Pot.

It is not enough to have good raw material for food, and an abundance of it, but skill is required for its preparation, that it may not only be agreeable to the taste, but digestible and nutritious. The fruits are the only articles of diet, suitable to man, which can be consumed as nature produces them. The aid of art is necessary to render all others palatable and fit for human sustenance. There are various productions of a vegetable origin which require, it is true, but little previous preparation; but these even must be made into salad and condiments by processes more or less artificial, and they are only used as subordinate

parts to the main repast, to which they serve to give additional flavor.

A practice prevails with some nations, especially the German, of consuming animal food which has not undergone the ordinary processes of the kitchen. They are thus said to eat their ham and herrings raw; but it is not so; for by the smoking and pickling to which they are always subjected before eaten, they are cooked, though in an imperfect degree. The acknowledged indigestibility of such articles, and the horrible malady* of which they are known to be the cause, prove how essential thorough cooking is to the healthfulness, if not to the palatability, of all animal food.

The principles of science applicable to cookery are few and simple; and as they only confirm the experience of careful observation, our cooks need not study chemistry to become proficients in their art. They have merely to exercise their senses diligently, and give heed to the results they indicate, and they will find out all that is essential to

* A disease of small worms which are introduced into the human system by eating meat, especially pork, infected with them. The high temperature of thorough cooking is the only sure means of destroying these worms, and rendering the food which contains them innocuous.

good, plain cooking. Attentiveness is the most important of all the qualifications of a cook. The acknowledged skill of the old negro Venuses of the Southern kitchens may be largely attributed to the fact of their being such fixtures to the hearth-stone. They were not distracted from their work by constant love-passages with Pompey and Cæsar, who were kept busy in the field, and not allowed to cross the threshold of the *massa's* kitchen. They were very unlike our Northern Bridgets, who are turning away every moment from the spit to greet a loving soap-fat man, or some other admiring compatriot. A dinner, to be well cooked, must be well watched; and during the whole process the cook should be chained, as it were, to the fireside.

All meat, before being cooked, should be subjected to certain preliminary processes. Fish and the water-fowl, such as wild duck, woodcock, and snipe, can hardly be cooked too fresh; but flesh, properly so called, should always be kept a certain time before it is exposed to the fire, that, its fibres becoming relaxed, it may be rendered more tender. The time of keeping it is, of course, to be regulated according to the season and temperature, but it should never be prolonged to the beginning of decomposition. The prac-

tice of hanging up wild fowl, venison, and other game, until the flesh has hardly tenacity enough to hold together, and emits an odor which seems to attract the appetite of the epicure but is repulsive to those of natural taste, is an unwholesome one. No food which has once undergone putrefaction can be healthful. In winter, meat, if preserved in a dry, cold place, and suspended, is better for being kept a week, or even ten days or more, after it is killed. In summer, too, it need not be cooked much sooner, provided its corruption can be prevented by ice, in direct contact with which, however, it should never be placed, as the maceration by constant moisture will make it vapid to the taste, and deprive it of much of its nutritious quality. All meat, in fact, before cooking, should be well dried, and only washed when it is to be boiled, and never if cooked in any other way. When the flesh is cut in such a shape as to admit of it, a good beating with the rolling-pin will be found to be an excellent preparative, and no steak or chop should be put on the fire without such a preliminary castigation.

Boiling is, of all cooking processes, the easiest and most general. It, however, notwithstanding its simplicity and universality, is often ill per-

formed. Meat can be boiled for either making soup or obtaining a good dish of solid food. Cooks are very apt to delude themselves with the idea that both may be consummated by one process, and that from the same pot they can have, simultaneously, a supply of nutritious broth and a well-cooked piece of meat. This is an error. It is impossible to get the two together. The soup must be sacrificed to the meat, or the meat to the soup. The process for obtaining one is essentially different from that for making the other. They are, in fact, diametrically opposed; for what is best for the soup is worst for the meat, and conversely. The cook must clearly decide either for the one or the other, before beginning the boiling process. If the object shall be a good soup, cut up and put your meat in cold water, apply the fire, raise the heat gradually to the boiling point, and then boil it well and long. By this means alone can all the nutritious and savory qualities of the meat be thoroughly extracted, and the desired result, a palatable and substantial soup, obtained. As for the solid residue, it will be as tasteless as a trodden-out slipper, and hardly more fit for food.

If, on the other hand, you wish to obtain a well-cooked piece of meat, put it whole in boil-

ing water, and keep it on the fire, never allowing the temperature to fall a moment for five minutes or so. After this time, reduce the temperature by adding cold water, and, withdrawing the pot partly from the hot coals, allow it to simmer until it is ready to serve. You will thus have a dish of solid food containing all its natural flavor and nutriment. As for the liquid contents of the pot, they may be emptied anywhere except into the hungry stomach, for they are no better adapted for satisfying the wants of appetite than so much dish-water.*

* The technical explanation of the effects of boiling meat is given in this extract from the *Journal of Chemistry:*

"The most economical way of using meat is to cook it in hot water, and serve it up in its own gravy. If it is boiled for preparing soup, the water should not be too quickly raised to the boiling point, since this tends to coagulate the albuminous portions and to prevent the juices from passing into the water. The meat should be chopped, or cut as fine as possible, and steeped for some time in cold water, which should then be gradually heated up to a temperature not exceeding 150 degrees Fahr., or 62 degrees below its boiling point. At the last moment the soup may be allowed to reach the boiling point. The bones should be crushed or broken up into small pieces, and boiled, or rather simmered, for eight or ten hours, in order thoroughly to extract their nutritive matter.

"Soup contains the greater part of the saline matter, with the creatine, creatinine, and kindred compounds, some of the

Roasting, though more of the nutritious properties of the meat are lost by it than by boiling, is generally preferred, in consequence of the increased savoriness obtained. The flavor of the food is always an essential element of its healthfulness; and if this is not agreeable, it is in vain

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albumen and fat, and an amount of gelatine, that depends upon the duration of the boiling process. Cold water extracts from one-sixth to one-fourth of the weight of the solid constituents of the meat; and this watery extract contains nearly all the savory, saline, and crystalline ingredients. After long-continued boiling, meat becomes a hard mass, composed of tough, muscular fibres, the areolar tissue connecting them, and parts of the nerves and blood-vessels. This is difficult to masticate, more difficult to digest, and so devoid of flavor that it is impossible to tell from what animal it came. As Liebig remarks, even a dog will reject it.

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"If we wish to cook meat in such a way as to preserve the maximum of nutriment in the most digestible form, we should place it in large pieces in boiling water, and keep it there for five minutes. The high temperature coagulates the albumen at the surface of the meat, stops up its pores, and thus prevents the juices from escaping. After this boiling of five minutes, add cold water to reduce the heat to about 150 degrees Fahrenheit, and keep it at that temperature until the meat is sufficiently cooked. It will then be found to be tender, juicy, savory, and nutritious. Salted meat intended to be eaten cold should be allowed to cool in the water in which it has been boiled."

for chemistry, weighing and measuring the component parts of any article, and finding a heavy balance in favor of its nutritious qualities, to commend it to the use of man. The laboratory will never become a substitute for the kitchen. There is a force that confronts the human machinery of digestion too subtle for the minutest analysis of the chemist, and too capricious to submit to his precise laws, but which the cook is obliged to study, and strive to gratify in all its vagaries of impulse. The taste has its demands, so importunate that no philosophy can safely resist them.

Roasting being such a favorite mode of cooking, it becomes more necessary that it should be well performed. The process is simple enough, but requires, particularly, that attentiveness which is deemed the most important quality of the cook. The joint of meat, it matters not of what kind, should be placed, as soon as it is ready for the spit, close to a glowing fire of hot coals, and kept there, with constant basting to prevent burning, for about ten minutes. This is necessary for the same reason that, in boiling, the meat is first plunged into boiling water, to solidify* the

* The chemists explain this scientifically by saying that the albumen of the surface of the meat is coagulated by the heat.

outside and render it impenetrable by the juices within, so that these may be prevented from escaping, and all the natural nutriment and flavor be retained. When this first process has been duly performed, the meat should be withdrawn to such a distance from the fire that it may roast but slowly and gradually until it is thoroughly well done. What is ordinarily termed rare, but properly raw, meat is never wholesome food.

For steaks and chops, broiling is in every respect a better process of cooking than frying.* It produces a much more palatable and wholesome dish. To broil well, it is necessary to have a very glowing fire of hot coals, free as possible from smoke and ashes. In this process, too, as in roasting and boiling, the strongest heat should at first be applied to all sides of the meat, that the whole surface may be, as it were, solidified, and the internal juices retained.

Frying, though bad for meat, will continue to be a favorite mode of cooking for some articles of food, which it renders very savory, and, if

* "Frying is the worst possible mode of cooking meat, especially for persons whose digestive powers are not vigorous, as it almost invariably develops a very acrid substance known as acroleine, and sundry fatty acids that are nearly as unwholesome."—*Journal of Chemistry.*

properly performed, not unwholesome. The ordinary mistake in frying is not using fat enough for the process. Every experienced cook is aware that if little only be used, the result is a greasy compound; but if so much that the article to be cooked can be entirely covered with it, it being at the same time in a state of brisk ebullition, the original food retains all its natural flavor, without the least smack of oiliness. The grease in which it is fried being very hot and abundant, acts at once upon the whole surface, and, closing its pores by coagulation, prevents itself from entering into the substance. On the outside only it forms a thin, crisp shell, free from all liquid unctuousness, very savory to the taste, and not difficult of digestion.

Stewing is a process of cooking much used, since it is well adapted to meat in small portions, and therefore very convenient. It is generally acceptable, moreover, to the taste, and, if properly conducted, not unwholesome. Flesh, if stewed slowly, and its juices retained, by closing the vessel in which it is cooked, makes a nutritious dish. All superfluous fat should be removed, and an excess of water avoided, the natural gravy of the substance being allowed to supply the liquid essential to the stewing process. Meat that has

not been cooked before is, of course, more nutritious than a rehash of what has been previously served. The repeated cooking of the same meat, however favorable to economy of money, is less so to that of enjoyment and health.

Corned and salted meat should be used rarely, only to give that variety of diet so demanded by the caprices of taste, and, in fact, by the requirements of health. It can not, however, healthfully compose the exclusive diet of man for any length of time; for the salting process deprives flesh of much of its nutritious quality, and of certain constituents which seem essential to the blood. A continued diet of salt meat gives rise, as is well known, to scurvy, unless a free supply of fresh vegetables is combined with its use. Before cooking salted flesh, it should be first well soaked in fresh water, and then boiled, like any other.

Vegetables are rarely sufficiently cooked in this country. Cooks seem more anxious to present for the table a good-looking than an easily digestible dish; and consequently, in order to preserve the green color and original form of the vegetable, they avoid thorough boiling. Most vegetable food, particularly that of the cabbage kind, contains, in its raw state, a very acrid and

poisonous element, known to the chemists as sulphureted hydrogen. This can only be got rid of by the long-continued application of heat at a high temperature. The cabbages of every variety, cauliflowers, turnips, carrots, and such-like, must be thoroughly well boiled, to render them wholesome articles of food.

The potato has become such an essential part of every-day diet, that it might be supposed that no one could be ignorant of the proper way of preparing it for food. It is, however, very rarely well cooked, simple as is the process. After peeling or washing thoroughly, the potatoes—for they can be cooked with or without the skins—should be put in cold water on the fire, and allowed to boil for about half an hour. Then the water must be all poured off, and a vigorous tossing for a minute or so given to the pot. This steams as well as dries the potato thoroughly, and, loosening its fibres, gives it that mealiness so agreeable to the taste and favorable to digestion. All vegetables should be well drained of superfluous water before serving. This is essential to good flavor and easy digestibility.

In making tea or coffee, two points are to be particularly regarded. The water, in the first place, must be always on the boil at the very mo-

ment it is brought in contact either with tea or coffee. This is only to be secured by first heating the vessels in which the infusion is to be made. If the hottest water is poured into a cold pot, its temperature will at once be reduced below the boiling-point, and it will have no longer the power of fully extracting the qualities of the tea or coffee. Secondly, to have the full flavor, it is essential to drink the infusion as soon as made; for if it is allowed to stand, the aroma, which is very delicate and fugitive, will escape. By infusing tea and coffee too long, moreover, the bitter and astringent principles which they contain are extracted, and the beverage becomes disagreeable to the taste and unfavorable to health, often producing constipation, and other dyspeptic symptoms.

Pastry, if properly made, may take its place, but it should be a very subordinate one, in the daily diet of the family. The so-called rich tart of the confectionery is more wholesome food than the ordinary plain domestic pie, which, from its usual mode of making, is apt to be heavy and indigestible. Pastry, to be good, should be rolled again and again; for it is by the process of frequent working that it becomes light. The English mode of making the pie without the under-

crust, is better than the American one with it, as this becomes sodden from moisture, and very difficult of digestion. Paste for boiled puddings should always contain a portion of suet, and never lard or butter. The cooking of pastry, whether by baking or boiling, must always be continuous and thorough.

The cook, it need hardly be said, must keep all her vessels and utensils scrupulously clean. This is to be done not only to avoid offending the nice fastidiousness of every decent feeder, but for health's sake. Whenever milk is used, especial care must be taken, not only by thorough washing and wiping, but by long exposure to air and sunlight, to free the vessel which is to contain it from the least suspicion of its former contents. A fermenting particle remaining, though so minute as to be imperceptible to the acutest sense, will be sufficient to corrupt almost instantaneously the largest quantity of milk, however pure, with which it may be brought into contact.

The pots, and other utensils of the kitchen, should be made of iron, tin, earthenware, and wood. Copper, if used, must have an internal coating of tin, which should be carefully watched, lest any break in its continuity might expose the food to the action of the poisonous metal. No

dangerous substances of any kind should ever be allowed to obtain admission into the kitchen. It is so easy to take a pinch of white arsenic instead of salt, if they have been inadvertently brought into proximity to each other, and sprinkle death into the pot, that a cook, who has every one's fate, more or less, between her thumb and forefinger, can not be too careful.

CHAPTER XXII.

An impotent Conclusion.—The Necessity of a Sick-room.—The Duties of the Householder.—Ventilation of Sick-room.—Requirements of Sick-room.—Open Windows.—Night Air.—Temperature of Sick-room.—Fire and open Windows.—Sunlight.—Furniture of Sick-room.—Reminders of Sickness.—Curtains.—Walls.—Carpets or Rugs.—Beds and Bedding.—Cleanliness.—Artificial Odors.—Disinfectants.—Note.

It seems but an impotent conclusion to a work on "The Health of the House," which professes to teach the means by which disease may be prevented, to close it with a treatise on the sick-room.

It is confidently believed that, if the principles inculcated in this book were generally adopted, there would be little occasion for making provision in any dwelling for the sick. The author, however, is not so sanguine, with all his faith in the power of man to protect himself against disease, as to suppose that people are ready at once to submit to the conditions, easy and intelligible as they may be, essential to an end so desirable.

There is not merely the obstinate attachment, on the part of most individuals, to traditional and unwholesome modes of living to be overcome, but there are certain malignant influences, only within the power of the community in its corporate capacity to control, to be counteracted. Even if men generally were rational enough so to govern their conduct of life as to free it from all self-incurred dangers, it would be still exposed to risk from any single fool or ignoramus. We can not, with all our exclusiveness, isolate ourselves. Wise and foolish, rich and poor, clean and dirty, all necessarily mingle their breaths together. The contaminated air of the hospital will mix with the perfumed atmosphere of the lady's boudoir, and the exhalations of the polluted body of the dying wretch of the gutter rise and wither the blooming frame of the palace Beauty, in spite of all the protecting folds of her luxurious coverings.

Conceding therefore, that, unfortunately, in most dwelling-houses, however well conducted, there will be occasional diseases, even of a severe character, it is well for every housekeeper to know something about their management. In the treatment, as in the prevention, of disease, the private judgment must be often exercised, and without any risk of interference with the special vocation

of the physician. There is always a period, at the outset of every malady, before the doctor comes, or can come, when it is necessary to know how to act, or to refrain from acting. During this preliminary time, and also in the course of all serious diseases, the unprofessional person is called upon to perform duties demanding more or less knowledge of a special kind, which it behooves him to acquire.

The doctor who, on entering a bed-chamber in which lay a sick man stifling in an atmosphere polluted by the poisonous emanations of his own diseased body and the breathing of a throng of officious friends, thrust his cane through pane after pane of the closed window, mad as he was supposed to be, could not have done a more rational thing. If abundance of pure air is essential to the preservation of life, it is still more necessary for the cure of disease. The sick not only contaminate the atmosphere which surrounds them, as do the well, by the exercise of their natural functions, but give off, in addition, from their lungs and skin, certain morbid products which are exceedingly deleterious, not only to themselves, but to others who may be exposed to their contact. The sick-room should, therefore, be essentially a thoroughly well-ventilated apartment.

A sick person, whatever be his malady, should be kept apart, as far as possible, from the rest of the household. He should have a bed-chamber exclusively appropriated to his use; and if the house admits of it, it would be well to reserve one always for the purpose. This, moreover, should be, in every respect, what is ordinarily regarded as among the best. Extent of space, abundance of windows, and a good exposure, are indispensable. There must be plenty of room, not only as one important means of securing a pure atmosphere, but that all the other requirements of the sick person may be satisfied without fear of jostling or annoying him by the presence of others, made too conscious to his morbid sensibility by closeness of contact.

The windows afford the best means for ventilating the sick-chamber; and these, we have no hesitation in declaring, should never be closed. The window should be opened at the upper part; and the extent of an inch or so is all that is requisite when the weather happens to be cold or stormy; but this may be indefinitely increased in the hot season. Communication between the sick-chamber and outer air is as necessary at night as by day, and the window should, consequently, be kept more or less open during both.

The air of the night, of which old women make such a bugbear, is even purer and more healthful to breathe than the air of the day, since it is less contaminated by the ordinary operations of busy man.

The temperature of the sick-room can always be kept, by means of a fire, at the proper degree, which should be generally 60° Fahrenheit, though it may require occasionally to be a little more or less, according to the nature of the disease. It is apt to be supposed that fresh air and a fire are in their nature so mutually opposed, that where one is let in, the other must be put out. This notion has, by depriving the sick of pure air, or necessary warmth, stifled or chilled many a poor wretch to death. Let your fires blaze, if fires are required, and open your windows at the same time; for there is no other means so effective for securing that purity of atmosphere essential to the safety and recovery of health.

The aspect of the sick-room should be such as to receive the direct rays of the sun, the influence of which not only cheers the mind, but tends powerfully to restore the health of the body.

The furniture of the sick-room ought never to be so great in quantity and size as to embarrass movement or prevent frequent and ready clean-

ing. An appearance of bareness, however, must be avoided, lest the taste and sense of comfort of the sick, who are apt to be exceedingly fastidious, be offended. All special reminders of the condition of the patient, such as ranges of labeled phials, covered vessels, and the various utensils of sickness, should be removed, as much as possible, out of his sight. Every demonstration, in fact, of particular provision for, and attentiveness to, the patient serves only, by reminding him too acutely of his infirmity, to discourage hope and retard convalescence. In fact, the sick should be treated as much like the well as their peculiar condition will allow.

Heavy curtains and drapery of all kinds likely to interfere with the free circulation of the air, the admission of light, and to harbor dust, dirt, and impurity of any sort, must be banished from the sick-room. The walls should never be papered. Paint* and whitewash are the best coverings, since they can be thoroughly cleaned and renewed, if it be necessary, as in case of infectious or contagious disease. Removable rugs are infinitely better than any fixture in the shape of matting or carpet. Bare floors, if painted, oil-

* "The best wall now extant is oil paint. From this you can wash the animal exuviæ."—MISS NIGHTINGALE.

ed, or lacquered, as in Germany, are still more advantageous.

Miss Nightingale says that every sick person should have two beds in his room, and each be occupied alternately every twelve hours. Iron is the best material for the bedstead, and, of course, horse-hair for the mattress. A very wide bed* does not add to the comfort of the sick, while it has the disadvantage of preventing ready access on the part of attendants. It should also be low; never, in fact, higher than a sofa. Two beds allow of the thorough drying and ventilating of the mattress and coverings during the twelve hours each is alternately vacated; and nothing is more conducive to the cure and comfort of the sick than frequent purification of their coverings. The best material for bedclothes is the light woolen blanket; and no coverlets of close texture or other kind of impervious covering should ever be used for either the sick or the well. The pillow ought to be so wide as to support the upper part of the chest and shoulders, as well as the head; for the oppressed patient especially requires every facility for breathing.

Attention to cleanliness, great as is its impor-

* Three and a half feet is the width recommended by Miss Nightingale.

tance in health, is more important still in disease, since sickness of all kinds not only generates filth, but thrives in it. All kinds of dirt, accordingly, should be removed at once from the sick-room. No masking, by means of artificial odors, of noisome stenches, or ingenious contrivances for hiding offensive products, should be adopted, but every thing that is polluting must be got rid of at once. Plenty of fresh air, combined with the heat from a good fire, is the best means of purifying the atmosphere which surrounds the sick. In ordinary ailments, the fire-place and windows are all the apparatus requisite for keeping the sick-room in a wholesome condition.

In certain infectious and contagious diseases, it may be necessary to resort to the use of disinfectants, as they are called; and there can be obtained at every drug shop various chemical preparations for the purpose, with which housekeepers should not fail to supply themselves. The best disinfectants of all, however, are found in every house. Heat, air, and water, when properly applied, will deprive most substances of any infectious quality they may have acquired. Clothes of the bed and person which can not be conveniently washed should be exposed for at least an hour to air raised to the temperature

of 300° Fahrenheit. Linen, and other material which may admit of the process, should be boiled in water, and thoroughly washed with soap.*

* Dr. Edward T. Wilson, of England, has published a card with the title of "Disinfectants, and How to Use them," from which the following directions have been taken:

DISINFECTANTS.

(A.) CARBOLIC ACID: Poison.—A wine-glassful well mixed with half a pint of warm water, for use in night-stools, sinks, water-closets, or for wetting a sheet to hang in the doorway. A wine-glassful to one and a half pint of water, for washing walls, furniture, etc. Diluted with 2000 times its bulk, for street watering.

Carbolic Acid Soap.—For the hands.

M'Dougall's Powder.—A combination of sulphite of magnesia and tar acid.

(B.) CHLORIDE OF LIME must be kept dry. 1 lb. to a gallon of water, for utensils, sinks, water-closets, drains, etc. 1 oz. to a gallon of water, for linen, which must not be left long in the solution before being wrung out in fresh water, as it is corrosive. 2 oz. to a gallon, for washing furniture, etc.; but it is apt to leave dampness.

(C.) CHLORINE GAS.—Poisonous, and irritating to the lungs, when in excess.

For an occupied Room.—Close fire-place, windows, etc., as directed under F. Pour over a quarter of a pound of black oxide of manganese in a dish, placed high, half a pint of muriatic acid (spirit of salt), and leave for 6 hours. It bleaches, and is apt to make white-limed walls sweat—useful for cabs.

(D.) CONDY'S FLUID.—A tea-spoonful to a pint, or a wine-glassful to a gallon of water, for utensils, sinks, floors, etc., for gargling, washing the hands, for baths, for adding to drinking-water, and for linen, which should be well soaked, and then wrung out in clean water: *if allowed to stand for a very few minutes in solution of this strength, it is discolored.** When the pink color is lost, the fluid is inert. The solution useful for vaporizing in an occupied room.

(E.) GREEN COPPERAS (sulphate of iron).—1 lb. thoroughly dissolved in a gallon of water, for drains, etc. A tea-cupful of this solution should be poured into the utensil before each time of using, and half a pint down the water-closet after each visit.

(F.) SULPHUROUS ACID GAS: Poison.

For unoccupied rooms.—When windows and fire-place have been securely fastened with paper and paste, in order to make the apartment as air-tight as possible, break from half a pound to a pound of brimstone into small pieces, mix with some live coals in a pipkin, or on a saucepan lid, supported over a bucket of water by a pair of tongs, close up the door, and leave for five or six hours. Clothing should be spread out on ropes, etc. It bleaches, and is apt to turn into sulphuric acid, which renders clothing damp and rotten.

OTHER DISINFECTANTS.—Charcoal, Dry Earth, Quicklime, Chloralum, Perchloride of Iron, Chloride of Zinc (Sir W. Burnett's Fluid—a wine-glassful to two and a half quarts of water, for general use: Poison), Chloride of Soda—a tea-spoonful to a pint, for soaking linen—Chloride of Potass (*Eau de Javelle*).

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* To remove stain, steep, before drying, in water containing salts of sorrel, 1 oz. to the gallon.

HOW TO USE THEM.

For basin to spit into, D.*—To receive *dirty rags*, etc., if they can not be burned, D or B.

For gargling, washing, etc., and personal use, D; also for vaporizing, to cleanse and freshen the air. Not poisonous when diluted. Carbolic toilet soap for the hands.

For impure drinking water.—Boil, or filter through charcoal, or add solution of D, until it retains a faint pink color.

For utensil or bed-pan.—E or B or A to be added, on each occasion, before using them.

For water-closet, sinks, etc.—B or A or E. Some to be poured down whenever used, and an extra gallon occasionally.

For cleansing foul air in occupied rooms.—Fresh air and D (vaporized).

For linen.—Soak well in D or B, or in chloride of soda, but *do not leave long before* transferring to clean, and, if possible, boiling water.

For woolen clothes, bedding, etc.—Hot air. Burn useless and inexpensive articles which can be spared.

For unoccupied rooms, F or C, followed by thorough scrubbing with soap and water. White liming.

For Cabs, C or F.

For washing furniture, floors, etc., D or B or A. Soap and water.

For a decomposing body, sprinkle with M'Dougall's Powder, or pour Sir W. Burnett's Fluid over before closing the coffin.

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* The letters refer to paragraphs on the opposite page, where the necessary directions will be found. Their order denotes the author's preferences.

For offensive heaps of refuse which can not be removed, cover two or three inches deep with charcoal, quicklime, or dry earth.

For offensive drains, ditches, etc., B (1 lb. disinfects 1000 gallons of running sewerage) or D, or perchloride of iron.

N.B.—*Carbolic acid and sulphuric acid gas* go well together, but should not be used with the other disinfectants, such as condy, chlorine, and the chlorides.

IN THE SICK-ROOM.—FRESH AIR, LIGHT, AND CLEANLINESS. * *

Remove every thing superfluous, and hang before the door, outside, a sheet kept well wetted with D or A. Avoid stuff dresses. * * *

Keep within reach a basin with D to spit into, and remove all handkerchiefs or rags immediately, and disinfect or burn.

In scarlet fever, oil the body, when the skin is peeling, twice daily, and use warm baths, with soap.

Bodies of persons who have died of infectious, contagious, and epidemic diseases should be kept carefully apart from the living, and buried without delay. * * *

CHAPTER XXIII.

An Enemy of the Household.—The Family Medicine-chest.—Youthful Tortures.—Faith in the Medicine-chest, and its Consequences.—Danger of Drugs.—Common Colds: Treatment.—Sore Throat: Treatment.—Coughs: Treatment.—Constipation: Treatment.—Colic.—Pains in Stomach and Bowels: Treatment.—Diarrhea and Dysenteries: Treatment.—Dangerous Diseases.—How indicated.—Management.—Dyspepsia: Treatment.—Eruptive Diseases.—Scarlet Fever.—Small-pox.—Measles: Treatment.—Hooping-cough: Treatment.—Rheumatic Pains: Treatment.—Fainting.—Hysterics.—Fits: Treatment.—Ear and Tooth aches: Treatment.—Chilblains: Treatment.—Cramp: Treatment.

THERE is no worse enemy to the health of a household, and more dangerous one, for it is insidiously introduced under the guise of friendship, than the family medicine-chest. Who can not recall the reverence with which that solemn box, formal and ponderous, yet sightly, from the neatness of its structure and the polish of its exterior, was once regarded by all? The old unlocked it with the cautious respectfulness due to a treasure, and the young looked upon its range of cut-glass bottles and variegated boxes, with

mystic labels and here and there a terrific warning of "Poison," and trembled. Every youngster might well tremble as he glanced at that store of bodily torment, from which he had suffered in the past, and was sure to suffer in the future. The disgusts of taste, and the writhings of the stomach, in the pains of a purge and the agonies of a vomit, were always associated, in the minds of the young, with that awful medicine-chest; but its very terrors seemed to heighten their reverence. Who ever heard of a boy, dare-devil as he might be, that ventured to lay sacrilegious hands upon that tabernacle, sacred to the household gods?

Such was the faith in the family store of medicine, that few cared to trouble themselves about avoiding the causes of disease, since they so confidently believed that they possessed the means of curing it. Prudence in living was disregarded, and excess of all kinds indulged in, under the belief that illness was the fate of man under any circumstances, and the medicine-chest the ordained means of bodily salvation. The smarting toe and swollen joint never seemed to suggest to the gouty guzzler the necessity of uncorking fewer bottles, and closing his mouth to superfluous dainties, but merely the expediency

of looking up his phial of colchicum, or some other grand restorative to be found in his domestic treasury of drugs. The very children became unusually presumptuous, and reckless of danger. Taught to place unbounded confidence in the contents of the medicine-chest, and sure of being dosed with them, they were afraid of no risk. The power of unripe apples and underdone pastry seemed nothing in comparison with the potency of rhubarb and castor-oil, and boys certain of the *wholesome* pains of the drug, did not care to refrain from the dangerous delights of the forbidden fruit.

It is to be hoped that this unbounded confidence in the efficacy of drugs is passing away. It would be well for the health of every family, and certainly an infinite relief to each palate and stomach in it, if all the medicine-chests were thrown into the sea. Mankind would undoubtedly be the better, although the fishes, as Dr. Holmes has said, might be much the worse for the operation.

All that can be done safely in the treatment of any disease by an unprofessional person may be done without the use of any drug whatsoever. All sick people, whatever may be their maladies, require chiefly repose of mind and body, pure

air and warmth, and attention to their instinctive wants. All other requirements may be satisfied by the resources of any ordinary household, without having recourse to the apothecary's shop. In directing, therefore, the management by the family of the most common ailments likely to afflict any member of it, there will be a studious avoidance of the recommendation of drugs, since the hap-hazard application of them by the unscientific is not only useless, but dangerous.

In a popular treatise like this it is impracticable to employ any classification of disease based upon the distinctions of science. The various ailments will, consequently, be noted and remarked upon as they may be suggested by their greater or less familiarity or frequency of occurrence, and sometimes according to the alphabetical order in which their usual appellations present themselves.

In common colds, where there is no indication, from unusual heat of the skin, or increased quickness of pulse, of fever or inflammation, little, if any, especial treatment is required. Laennec, the great French authority on the diseases of the chest, never advised any other treatment for a simple cold than a glass of hot punch or wine on going to bed; and this mode is un-

doubtedly often very effective, particularly in the case of a person of a nervous temperament. People of an inflammatory and congestive tendency had better, perhaps, avoid the use of any stimulant, and confine themselves to the ordinary repose, dieting, and nursing at home if the attack should be tolerably severe. A warm foot-bath at night and some hot tea or gruel are all that are requisite in addition. An entire abstinence from all fluids for twenty-four hours will sometimes remove in that short period the severer symptoms of an ordinary cold in the head. An excessive nursing, however, of this slight ailment, which will ordinarily run its course in spite of any treatment, is, probably, more harmful than beneficial. M. Dupré, a great French singer, who had every motive for protecting himself against a cold—for each attack was a loss of many thousand francs—declared, as the result of his experience, that it was better not to use too great or many precautions. It was well, he acknowledged, to avoid, as far as possible, exposure to cold and sudden changes of temperature, by care and proper clothing; but he avowed that the best protection of all was to fortify the body by exercise in the open air during all seasons and weather.

Where there is a soreness of throat, the best means of relief is surrounding the neck with an envelope of wetted linen or cotton, oil-silk, and thick flannel, each in the order mentioned. This, too, is the best application in the croupy cough and breathing with which children are apt to be suddenly attacked at night. As there is always a great dryness of the throat, a draught of water should also be given. A tea-spoonful of salt in a tumbler of water will serve as a good gargle, where there is a disagreeable irritation, leading to a constant hacking. Ordinary coughs will seldom require more than a frequent sipping of gum-water or linseed-tea. If apparently coming deep from the chest, the application of a fomentation prepared like the envelope of linen, oil-silk, and flannel, for the throat, though larger, is the best.

Constipation of the bowels, though a very common ailment, would be a very rare one, if the laws of diet and regimen laid down in this book were faithfully obeyed. From the earliest age, people should accustom themselves to resort, at a fixed period of each day, to the water-closet. There is no surer means than such a habit, to secure ease and regularity of function. A glass of cold water before breakfast is a good laxative.

Colic and pains in the stomach or bowels are best relieved by a drink of water, so hot as almost to scald the mouth, and the application of very hot flannels to the seat of suffering. Diarrheas and dysenteries, at their outset, can be readily cured by abstinence from food, lying motionless on the back, and binding a broad flannel bandage tightly around the stomach and bowels. In these, however, and all other diseases which may become serious, it is not intended that any family should dispense with the counsels of the physician, who ought to be called in whenever there is a continuance of illness and a prospect of danger.

Almost all the acute inflammatory maladies, the course of which only skillful medical art can conduct to the desired issue in health, are of a nature that are better, at the beginning, at least, for not being interfered with. The outset of all of them is so alike, that a physician of the greatest experience is unable, at first, to decide what particular character the disease will assume. He, consequently, can not apply any specific remedy, even if his pharmacopœia supplied him with such. The only thing to be done is of a general kind. When there is great *malaise*, as the French say, or discomfort, with aversion to all

ordinary effort, and nausea, with dislike to the common food, and feverish symptoms, such as flushing of the face, headache, heat of skin, and quickness of the pulse, it may be generally inferred that the person showing such symptoms is attacked with a serious disease. Before the doctor can come, who ought to be sent for at once, the patient should be placed in a bed and wrapped up warmly, in an airy room; kept perfectly quiet in body and mind, and fed only with the simplest food, if he has any appetite, and given cold water to drink according to his thirst, or left entirely abstinent, if he prefers.

Dyspepsia is to be avoided by strictly subjecting living to the laws of health. There is no other way of preventing or curing it. Its usual symptoms may be removed by simple means. The spasmodic pains arising from indigestion are best relieved by draughts of water, as hot as can be drunk; the heart-burn and disagreeable eructations will often be alleviated by a little charcoal made of burned bread, and the constipation by a full glass of cold water in the early morning, followed by a brisk walk. The habitual use of carbonate of soda and other drugs, though they may temporarily give ease, weaken the stomach, in the course of time, and make the

disease worse. What is called a poor diet is by no means the best for the more common type of dyspepsia, which is of an atonic kind, and requires good food, somewhat seasoned, and a moderate use of light wine mixed with water. The appetite is often, in this disease, voracious, and care should be taken not to indulge it too freely. The kind of food is generally less important than the quantity, an excess of which should always be avoided.

The various eruptive diseases—small-pox, scarlatina, measles, etc.—if uncomplicated with other affections, should be left to run their natural course, without any other treatment than skillful nursing, and such management as is in accordance with the ordinary laws of hygiene. Pure air, cleanliness, repose, and simple diet, are all that even art demands.

Hooping-cough, if without complication, can hardly be left too strictly alone. There is no drug that ever cut it short in its course, and few medicines are known capable of relieving its spasms. Plenty of air, and change of habit in living, are among the most effectual means of relief.

The hot bath will alleviate somewhat the pain of an attack of rheumatism; and frictions with

mustard, or a poultice of it, may be applied with advantage to the suffering joints.

A fainting person should always be placed in an inclined position, with the head lower than the body, and a little cold water thrown with sudden violence into the face. In an hysterical attack, any thing calculated to arouse and distract the mind of the sufferer will always be found beneficial. Beating of the hands, or even a fillip upon the nose, though it may excite anger, will allay the troublesome symptoms of the affection. In these, and in all fits of any kind, the clothes, and all constricting bandages, such as neckerchiefs and corsets, should at once be loosened. No violence should be used in controlling the convulsive movements; and when the spasms are over, the patient should be put to bed, and allowed to repose in quiet.

In earache and toothache, hot fomentations of flannel wrung out of boiling water are the best applications, and exposure of the painful part to the steam from a tea-kettle is also good. A little warm oil may be dropped into the ear, or a roasted onion applied while hot. In continued toothache the dentist ought to be consulted; for the operation of drawing or filling will be necessary.

The best means of avoiding chilblains is plenty of exercise in the open air and avoidance of too close a proximity to a hot fire. When they exist, and the skin is not broken, rubbing with a little alcohol, or bathing the feet in hot water with a supply of mustard, are good remedies. In frost-bites, the patient must be kept out of hot rooms and away from the fire. Rubbing with snow, or bathing in ice-cold water, is acknowledged to be the most effectual means of cure; and the general circulation of the body may be quickened by a draught of weak brandy-and-water.

In cramp, friction or extension of the muscles and the hot bath will ordinarily remove the attack; and the patient, if he has suffered severely, had better be placed in a warm bed, with hot bottles to his feet, and given a cup of tea, or weak dilution of spirits.

CHAPTER XXIV.

Accidents. — Danger of Overcaution. — Cuts: their Treatment. — Wounds of Veins and Arteries: how distinguished. — Staunching of Blood. — Sprains: Treatment. — Burns: Treatment. — Inflammability of Women. — Sunstroke: Treatment. — Bites and Stings: Treatment. — Nose-bleeding: Treatment. — Bleeding from Lungs and Stomach: Treatment. — Fractures: Management. — Dislocations. — Courage of Attendants. — Confidence of Patients. — Conclusion.

If accidents will happen, even in the best regulated families, they must be pretty frequent in households as generally constituted. The best safeguard does not consist in keeping up, on the part of children, a constant alarm of danger. This will render them so nervously timid and irresolute that they will lose the power of self-command essential for the avoidance of the risks to which the young must be inevitably exposed. A child who is constantly warned, with a threat of danger, not to touch a knife, or any instrument capable of wounding, will probably, on the first act of disobedience, do himself some mischief from the very awkwardness and timid un-

steadiness with which he handles the forbidden thing.

Cuts are the most common accidents in a family, and there should always be means in readiness for meeting the occurrence. A supply of old linen and long bandages, about two inches in width, a few small soft sponges, needles and thread, and a roll of adhesive plaister, should be kept together, and always so accessible as to be at hand on every emergency. Where the bleeding from a cut is very abundant, the first thing to be done is to check it. If the blood is from a vein, as can be seen by its color, which is dark and purplish, the mere application of cold water, with pressure, will ordinarily staunch it. Should the wound have clean edges, these must be brought together with precision, and so kept by separate stitches, with intervals left between them, if there is domestic courage enough to perform the operation, or the simpler, though less effective, means of slips of adhesive plaister. When this is done, cover the wound with a bit of soft linen, moistened with cold water and folded two or three times; and finally bind up the whole with frequent turns of bandage, pressing rather upon the injured than the uninjured part. If the cut should be ragged, with loss of

skin, it will be useless to attempt to unite its edges, and the best thing to do is to apply bits of folded linen dipped in cold water.

Should an artery be wounded, as will soon be discovered by the profuse and jerking issue and bright red color of the blood, let a skillful surgeon be sent for at once. In the mean time don't let the patient die from loss of blood, but bind a handkerchief firmly on the limb between the wound and the body, and insert a ruler or stick of any kind under the handkerchief, and twist and tighten it until the stream of blood is evidently checked. When the wound is elsewhere than upon the legs or arms, and its bleeding can not thus be controlled, the best thing to do is to apply cold water or ice to it, and pressure by means of a succession of bits of linen folded into squares, and gradually increased from the lowest, which should be of a size sufficiently small to come into close contact with the injured part. This application will form a kind of reversed pyramid, which must be kept in its place by a bandage firmly applied. Repose from action of all kinds must be enjoined upon the patient, who should be kept perfectly quiet, lying down, but not too warmly wrapped up, until the arrival of the surgeon.

The best domestic treatment for bruises of all kinds is the application of flannel wrung out of very hot water, and frequently renewed. For the cure of sprains, perfect rest of the injured part is the most essential. Cloths dipped in cold or hot water, and frequently applied, will ordinarily give relief to the pain, which is generally severe at first, but seldom continues long.

Burns, if deep and extensive, are dangerous, and require the most skillful medical art for their treatment: there should be as little delay as possible in sending for a physician or surgeon. When superficial and covering but a small space, domestic care and resources are quite adequate for their proper management. Raw cotton applied at once is an excellent application, if there is no break in the skin. When small blisters only are formed, it is better to leave them alone; but if there should be large ones, it will be well to open them and let out the accumulated fluid beneath, taking care, however, to make the aperture for the purpose as small as possible with a needle or some other fine puncturing instrument. More of the integument left to cover the injured part, the better. When the burn is very serious, the chief danger is from the sufferer sinking from the shock; and it will be necessary to sup-

port his strength with wine. Flour sprinkled over burns of any kind is a good application; and when the pain is allayed, and they assume the character of an ordinary sore, they should be treated with dressings of cold water.

While women persist in increasing their inflammability to the highest degree, by covering themselves with the greatest possible quantity of the most combustible material, they will be sure to be occasional victims of a conflagration. Most of the accidents from fire happen to women, and generally when expanded for a ball or a party, in some spread of flimsy stuff with which, like a gaudy butterfly, they hover about a light or blazing fire. With presence of mind, which is rare under such circumstances, there would be little danger, for the nearest rug, blanket, cloak, or any woolen article caught up and rolled about the person would easily extinguish the first spark. By-standers should prevent any one whose dress has caught fire from running about. If the witness of the accident should be a male person, let him strip off his coat, if nothing better can be more readily had, and, holding it stretched out with his two hands, catch the burning person, and quickly inclose her in such a way with the garment as to wrap her body tightly around.

He at the same time should also use his power of compression to extinguish the fire.

Sun-stroke, which is now no longer regarded as being inflammatory in its nature and requiring bleeding, but is considered to be essentially prostrating, should be treated so as to support rather than diminish the strength. Cold water or ice should be freely applied to the head and neck, a mustard plaster to the pit of the stomach, and heat to the feet. The sufferer should be made to swallow some little weak stimulant: a glass of good dry Champagne, like the Consular Seal, if it is at hand, may be given with advantage. If Champagne, which is the best, as it is a rapidly diffusible excitant and acts speedily, is not accessible, a small quantity of spirits diluted with water may be substituted. As sun-stroke is seldom produced by the direct action of the solar rays, without the accompaniment of fatigue, people in excessively hot weather should avoid, if possible, hard labor or severe exercise when exposed to the sun.

Bites and stings are best treated by extracting the venom by sucking with the lips, provided these are free from any crack or sore. Rags dipped in water, wrung out, and covered with oil-silk, which will retain the heat of the part

and the moisture of the application, make a good poultice in these and all other cases in which it may be required.

In bleeding from the nose, the patient should be made to assume a position, by throwing back his head and raising his arms, unfavorable to the flow of the blood. Cold water, ice, or cold metal in any shape—a key or what not—should be applied to the back of the neck. When the bleeding continues to be profuse, the nostrils may be plugged with bits of soft rag dipped in cold water, and retained in their place by pressure with the finger.

Bleeding from the lungs or stomach is best checked by complete rest on the back, and occasional small draughts of iced water and lemonade. There is a tendency, it may be consolatory to know, in most bleeding to check itself long before it can become fatal, by the prostration its very profusion creates.

Fractures require, for their final treatment, the skill of the surgeon; but in most cases other persons are called upon to act at first, and they should know how they can do so with the least mischief. If the arm should be fractured, steady it at once with a sling prepared by folding a large handkerchief once triangularly, and so applied as

to support the whole limb to the tips of the fingers. When a foot, leg, or thigh is fractured, and it is necessary to carry the sufferer any distance, however small, he should be borne, by the hands and shoulders of men, upon a shutter or some solid support, broad enough to sustain his whole frame fully stretched out. A jolting wagon or carriage of any kind is the worst means of conveyance. A pillow should be placed under the injured limb, and fastened around it by means of tied handkerchiefs. The great object should be to prevent motion to the leg, either on the part of the patient himself or those who have any thing to do with him. With some restorative, in the form of cold tea, water, or a little wine, and a cheering word, he can be left with safety until the surgeon comes. Dislocations, which will be rarely distinguished by unprofessional persons, may be treated by them in the same way as fractures.

The various processes recommended for the management of diseases and accidents are of the simplest kind, but they require the self-command which knowledge and courage are sure to give to make them effectual. Every chief of a family, and each member of it, in fact, should, by a resolute and habitual control of their nerves and

feelings, have their judgments so free from embarrassment that all their energies of mind and body may be equal to any domestic emergency that presents itself. In all the ills that flesh is heir to, the spirit does not fail to exert a remarkable influence; and every sufferer's chance of bodily relief depends greatly upon the state of his mind. If hopeful of a good result, he is half cured; but if desponding, his case is already much aggravated. The courageous and judicious action of the attendant will give that moral confidence to the patient which is a powerful auxiliary to the treatment of all bodily affections.

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THE END.

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